United States Department of the Interior

FISH AND WILDLIFE SERVICE

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February 27, 2002

Memorandum

To: State Director, Bureau of Land Management, Sacramento, California

From: Field Supervisor, Ventura Fish and Wildlife Office, Ventura, California

Subject: Biological Opinion for the California Desert Conservation Area Plan [Lane-Mountain Milk-vetch, Ash Meadows Gumplant, and Amargosa Niterwort] (6840(P) CA-063.50) (1-8-01-F-18)

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the California Desert Conservation Area Plan. The proposed action is the California Desert Conservation Area Plan as it has been formally amended since 1980, modified by previous consultations related to grazing, modified by proposed interim conservation measures, and proposed to be modified by the Northern and Eastern Mojave bioregional plan. At issue are the effects of the California Desert Conservation Area Plan, as modified and proposed for modification, and ongoing activities occurring in the California Desert Conservation Area on the federally endangered Lane Mountain milk-vetch (*Astragalus jaegerianus*) and Amargosa niterwort (*Nitrophila mohavensis*) and the threatened Ash Meadows gumplant (*Grindelia fraxino-pratensis*) and the designated critical habitat of the latter two species. This document was prepared in accordance with section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act). Your request for formal consultation was received on January 31, 2001.

This biological opinion is based on the following information: (1) the California Desert Conservation Area Plan, as modified by various planning amendments between 1980 and 1999; (2) the Draft Environmental Impact Statement for the Northern and Eastern Mojave Planning Area; (3) your biological evaluation (Bureau 2001a); (4) information that was transmitted in a memorandum from the Bureau of Land Management (Bureau) to the Service on September 27, 2001; (5) various written and oral communications, including meetings between staff of the Service and the Bureau; (6) previous biological opinions on sheep and cattle grazing; and (7) various reports and publications. A complete administrative record of this consultation is on file in the Service's Ventura Fish and Wildlife office.

CONSULTATION HISTORY

On March 16, 2000, the Center for Biological Diversity, the Sierra Club, and the Public Employees for Environmental Responsibility filed a lawsuit against the Bureau. The plantiffs alleged that the Bureau violated section 7(a)(2) of the Act and its implementing regulations by failing to initiate and complete a programmatic consultation with the Service on the effects of the California Desert Conservation Area Plan, its amendments, and all related actions that may affect listed species in the California Desert Conservation Area that are authorized, approved, allowed, or otherwise carried out pursuant to the California Desert Conservation Area Plan and its amendments. The plantiffs also alleged that the Bureau violated section 7(d) of the Act and its implementing regulations by authorizing, allowing, or otherwise carrying out a variety of land use practices and other projects that might affect federally listed species prior to completing a programmatic consultation with the Service on the California Desert Conservation Area Plan and its amendments.

On August 25, 2000, the plantiffs and the Bureau agreed to a settlement agreement that was approved by the U.S. District Court, Northern District of California, San Francisco Division. Terms of the agreement required that the Bureau enter into formal consultation with the Service under section 7(a)(2) of the Act on the California Desert Conservation Area Plan as it would be modified by proposed amendments resulting from various planning efforts. On January 16, 2001, the plantiffs and the Bureau agreed to a second settlement agreement that described 58 measures intended to promote the conservation of various listed species, including the three addressed in this consultation, within the California desert.

The biological evaluation (Bureau 2001a) suggested that the threatened spring-loving centaury (*Centaurium namophilum* var. *namophilum*) may occur in the area occupied by the Ash Meadows gumplant. At least two species of centaury occur in the Ash Meadows area (Knight 1987); the taxonomic identity of the centaury plants in the area where the Ash Meadows gumplant occurs in California has not been determined. The riparian habitat in the lower Carson Slough area in California is drier than what is typically associated with the listed variety of centaury. For these reasons, we will not consider the centaury taxon in the project area as the listed variety until such time that a conclusive taxonomic determination is made. This taxon will not be evaluated further in this document.

We provided a draft biological opinion for your review on January 24, 2002. You provided comments on the draft by facsimile on February 15, 2002 (Bureau 2002). We incorporated many of your comments verbatim; we appreciate the efforts of your staff to clarify several aspects of the California Desert Conservation Area Plan. In a few cases, after discussions with your staff, we incorporated the comments in a modified form.

In our cover memorandum for the draft biological opinion, we inquired as to the status of lands within the expansion area for Fort Irwin. The Fort Irwin Military Land Withdrawal Act of 2001 reserved a portion of the area occupied by the Lane Mountain milk-vetch for various military

purposes and "conservation and related research." As you clarified in your response to the draft biological opinion, responsibility for management of these lands passed to the Department of the Army when this legislation was signed. This biological opinion has been revised to reflect the current management situation.

DESCRIPTION OF THE PROPOSED ACTION

Purpose and Function of the California Desert Conservation Area Plan

Congress designated the California Desert Conservation Area with section 601(c) of the Federal Land Policy and Management Act of 1976. To provide for management of recreational use and to resolve other resource and public land use conflicts, the Federal Land Policy and Management Act also directed the Secretary of the Interior to "prepare and implement a comprehensive, long-range plan for management, use, development, and protection of the public lands within the California Desert Conservation Area." The purpose, as specified by Congress, was "to provide for the immediate and future protection and administration of the public lands in the California Desert within the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality." The California Desert Conservation Area Plan was signed in January 1980 and now serves as the primary document that describes the basic management principles the Bureau uses for managing its portion of the California Desert Conservation Area. Since adoption, nine major amendments to the California Desert Conservation Area Plan have been completed.

The California Desert Conservation Area Plan employs three basic tools for managing resources in the California Desert Conservation Area. These tools are:

1. Four multiple-use classes are the basis of a land zoning system that allows for a variety of uses and resource conservation activities.

2. Twelve elements provide detailed treatments and prescriptions addressing the management of different land uses and resources.

3. The designation of special management areas, including, but not limited to Special Areas and Areas of Critical Environmental Concern, provides for the conservation of specific resource values.

Previous Consultations

The Bureau and Service have completed numerous formal consultations for actions that have occurred within the boundary of the California Desert Conservation Area. The only previous consultations relevant to any of the three species considered in this biological opinion regarded sheep grazing (1-6-91-F-18 and 1-8-94-F-16). As a result of the earlier biological opinion, subsequent extensions of that biological opinion, and the later consultation, the Bureau has not

allowed the grazing of sheep within most areas of critical habitat of the threatened desert tortoise (*Gopherus agassizii*) since approximately 1991; the removal of sheep grazing from this area benefits the Lane Mountain milk-vetch. The 1994 consultation will remain in effect until the Western Mojave Coordinated Management Plan is finalized and implemented.

Purpose and Function of the Proposed Interim Measures

The Bureau has proposed to implement several interim measures to protect threatened and endangered species within the California Desert Conservation Area. The interim measures were developed to provide short-term conservation benefits that can be implemented without incurring the long time frames that are required to complete the comprehensive bioregional plans.

Most of the interim measures will remain in effect until the California Desert Conservation Area Plan can be amended through the development of the bioregional plans. The final measures amending the California Desert Conservation Area Plan in the bioregional plans may differ from the interim measures presented here. As new amendments are proposed for the Plan, the Bureau will consult, pursuant to section 7(a)(2) of the Act, with the Service on the proposed changes.

Three interim measures proposed by the Bureau are relevant to the species being considered in this biological opinion. One measure, fencing of occurrences of the Amargosa niterwort and Ash Meadows gumplant, has already been implemented; additional discussion of this measure is included in the Environmental Baseline section of this biological opinion. To protect the Lane Mountain milk-vetch, the Bureau has proposed to retain all public lands containing populations of this species, consistent with Fort Irwin expansion legislation of December 2000. The Bureau also proposed to consider land exchanges or disposal involving listed species only if the exchanges or disposal would benefit the species.

Purpose and Function of the Bioregional Plans

Because the California Desert Conservation Area covers approximately 25 million acres and land management issues are substantially different across the desert landscape, federal, state, and local land management agencies have divided the California Desert Conservation Area into five bioregional planning areas. These include the Western Mojave Desert, the Northern and Eastern Mojave Desert, the Northern and Eastern Colorado Desert, the Western Colorado Desert, and the Coachella Valley. Major interagency planning efforts have been underway for some time in four of the five areas. Planning efforts have not yet begun in the Western Colorado Desert bioregion. The bioregional plans will be or have been written to develop region-specific management activities that are applicable to the local region. As such, the plans will address unique biological resource issues that are applicable to a given area and provide solutions that address local land management needs. The Bureau has participated in the bioregional planning efforts with the intent of amending the California Desert Conservation Area Plan to develop area-specific management plans that will address and improve conservation management of biological resources, particularly as it relates to protection and recovery of threatened and endangered

species. The species considered in this biological opinion occur within the Western Mojave Desert and Northern and Eastern Mojave Desert bioregional planning areas. The West Mojave Coordinated Management Plan is currently being developed; the draft Northern and Eastern Mojave plan has been released for public review.

Future Consultations

The California Desert Conservation Area Plan states that threatened and endangered species will be protected through compliance with the Act. The Bureau also notes in other documents that future consultations, pursuant to section 7(a)(2) of the Act, would be required for site-specific actions. Consequently, we have not repeated these commitments throughout the description of the proposed actions.

Multiple-Use Classes

To more effectively and consistently manage its portion of land within the California Desert Conservation Area boundary, the Bureau has developed a land zoning system that provides specific land management prescriptions. Under this zoning strategy, most lands managed by the Bureau are assigned one of four multiple-use classes. The multiple-use class assignment is based on the considered sensitivity of resources and kinds of uses occurring in each geographic area. The four multiple-use classes are Class C (Controlled Use), Class L (Limited Use), Class M (Moderate Use), and Class I (Intensive Use).

Multiple-Use Class C: Formally designated wilderness areas are managed under this class. Congress designated wilderness areas across large portions of the California Desert Conservation Area in 1994 with the California Desert Protection Act; these Congressional designations supercede the multiple-use class boundaries assigned by the Bureau in 1980 when the California Desert Conservation Area Plan was finalized.

Multiple-Use Class L: Lands within this class include areas that are managed to provide for lower density, carefully controlled multiple uses of resources while ensuring that sensitive values are not significantly diminished.

Multiple-Use Class M: Lands within this class include areas that are managed to provide for a wide variety of present or future uses that include mining, livestock grazing, recreation, energy, and utility development.

Multiple-Use Class I: Lands within this class include areas that will experience concentrated use serving human needs. The Bureau attempts to mitigate impacts to resource values in Class I lands and attempts to rehabilitate these disturbed areas to the extent possible while conserving resources and mitigating impacts to resource values.

In addition to the four multiple-use classes, the Bureau also manages a limited amount of land that has not been classified. Parcels in the "unclassified lands" category are managed on a case by case basis, according to the land tenure adjustment element that is described in greater detail below.

The Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant do not occur on any Class I, C, or unclassified lands. Consequently, we will not discuss these multiple-use classes further in this biological opinion. The following section describes the differences between Class L and M lands as they relate to the species under consideration in this biological opinion.

All land-use actions and resource-management activities on public lands must meet the guidelines for the class of land on which they would occur. These guidelines are divided into the following 19 categories and are more fully described in the California Desert Conservation Area Plan (Bureau 1999). Implementation of most guidelines within Class L and M lands would require any proposed action to undergo site-specific analysis, with protective measures added to any permit, grant, or mining action (plans of operation or notice) processed by the Bureau. In the following description of these guidelines, we have omitted discussions that are not relevant to the management of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant.

1. Agriculture: Agricultural practices and uses are not allowed in Class L and M lands. Because this program guidance prohibits the disturbance of land that may be occupied by these species, it will not adversely affect and will benefit the species being considered in this biological opinion. Consequently, the agricultural guidelines will not be discussed further in this document.

2. Air quality: The Bureau manages Class L and M lands to protect air quality and visibility in accordance with Class II objectives of Part C of the Clean Air Act unless otherwise designated another class by the State of California as a result of recommendations developed by any air-quality management plan developed by the Bureau. Management activities that conform with Class II objectives will result, at a minimum, in the maintenance of existing air quality conditions and will not result in the degradation of current air quality conditions. We anticipate that this guideline is not likely to adversely affect the species being considered in this biological opinion because maintenance of Class II objectives should not impair the growth or reproduction of individuals of these species. Consequently, the air quality guidelines will not be discussed further in this document.

3. Water quality: Within Class L, areas will be managed to provide for the protection and enhancement of surface and groundwater resources, except for instances of short-term degradation caused by water development projects. ("Water development projects" are generally considered to be springboxes and other devices used at springs and streams to

provide water to livestock and wildlife (Foreman, pers. comm.).) Best management practices, developed by the Bureau, during the planning process for specific projects, will be used to avoid degradation.

Because they are intended to protect and enhance water quality, the guidelines for water quality are unlikely to adversely affect the Ash Meadows gumplant. The Lane Mountain milk-vetch is not a water-dependent species; these guidelines would not affect it. Consequently, this guideline will not be discussed further in this document in relation to the Ash Meadows gumplant and Lane Mountain milk-vetch.

Within Class M, areas will be managed to minimize degradation of water resources. Best management practices, developed by the Bureau, during the planning process for specific projects, will be used to avoid degradation.

4. Cultural and paleontological resources: The program guidance calls for the Bureau to preserve and protect archaeological and paleontological values that occur in both Class L and M lands.

5. Native American values: Cultural and religious values of Native Americans will be preserved where relevant and protected when applicable.

6. Electrical generation facilities: The Bureau's guidelines preclude the possibility of establishing nuclear and fossil fuel facilities on Class L lands. Because this program guidance prohibits the disturbance of land that may be occupied by these species on Class L lands, it will not adversely affect the species being considered in this biological opinion. We will not discuss nuclear and fossil fuel facilities on Class L lands further in this document.

   The Bureau's guidelines allow the establishment of nuclear, fossil fuel, wind, solar, and geothermal facilities on Class M lands and wind, solar, and geothermal facilities on Class L lands.

   Existing facilities in both Class L and M lands may be maintained and upgraded or improved in accordance with special use permits or by amendments to rights-of-way. No such facilities occur within the habitat of these three species; therefore, this guidance will not affect the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant. Consequently, we will not discuss the maintenance or improvement of existing electrical generation facilities further in this document.

7. Transmission facilities: Within Class L and M lands, new gas, electric, and water transmission facilities and cables for interstate communication may be allowed only within designated corridors; these corridors were developed specifically for large-scale facilities. To minimize the number of separate rights-of-way for different and unrelated

utility projects, 16 planning corridors have been identified. No utility corridors are located within the habitat of the three species being considered in this biological opinion; therefore, they will not be affected by this guideline. Consequently, we will not discuss new gas, electric, and water transmission facilities and cables for interstate communication further in this document.

7a. Distribution facilities: Within Class L and M lands, existing facilities may be maintained and upgraded or improved in accordance with existing right-of-way grants. This guideline will not affect the Amargosa niterwort or Ash Meadows gumplant because no utilities currently exist within their habitats. Consequently, this guideline, in relation to these two species, will not be discussed further in this biological opinion.

Within Class L lands, new distribution systems may be allowed and will be placed underground, where feasible, unless this would have a more detrimental effect on the environment than surface alignment. New distribution facilities will be placed within existing rights-of-way, where they are reasonably available.

Within Class M lands, new distribution systems may be allowed and will be placed within existing rights-of-way, where they are reasonably available.

8. Communication sites: Existing facilities in both Class L and M lands may be maintained and used in accordance with right-of-way grants and applicable regulations. This guideline will not affect the Amargosa niterwort or Ash Meadows gumplant because no communication sites currently exist within their habitats. Consequently, this guideline, in relation to these two species, will not be discussed further in this biological opinion.

Within Class L and M lands, new sites may be allowed.

9. Fire management: Measures to suppress fires will be taken in accordance with specific fire management plans subject to such conditions as the authorized officer deems necessary. Fire suppression may involve the use of motorized vehicles, aircraft, and fire retardant chemicals.

10. Vegetation Harvesting: On Class L and M lands, removal of native plants for commercial and non-commercial purposes and harvesting by mechanical means may be allowed by permit. Unusual plant assemblages will be considered when conducting site-specific impact analyses so impacts can be minimized.

Mechanical control to manipulate vegetation will not be allowed on Class L lands. Because this guideline precludes adverse effects to the listed species, we will not discuss it in relation to Class L lands further in this document. On Class M lands, mechanical control of vegetation may be allowed after consideration of possible impacts.

Aerial application of chemical controls to manipulate vegetation will not be allowed on Class L and M lands. Because this guideline precludes adverse effects to the listed species under consideration in this biological opinion, we will not discuss it further in this document.

Eradication of noxious weeds on Class L lands by chemical means may be allowed after site-specific planning. Spot application of pesticides on Class M lands may be allowed after site-specific planning.

Exclosures may be allowed within Class L and M lands.

Prescribed burning may be allowed within Class L and M lands after development of a site-specific management plan.

11. Land-tenure adjustment: The Bureau's program guidance for land-tenure adjustment is designed to direct the acquisition and disposal of public lands within the California Desert Conservation Area. The purpose for acquiring and disposing of public lands is related to the difficulty of effectively and efficiently managing a land base that possesses an intermingled land ownership. The Bureau therefore has a program for acquiring lands that may improve the operational management aspects for special areas such as areas of critical environmental concern, intensive use recreation areas, and Class C lands. Conversely, other lands that may have a limited resource value may be disposed of at fair market value if the action is deemed to be beneficial.

Program guidance does not allow the sale of Class L lands. Additionally, the Bureau has proposed to retain all public lands containing populations of the Lane Mountain milk-vetch. The Ash Meadows gumplant occurs only on Class L lands. The guideline and the proposed interim measure preclude the disposal of all lands supporting the Lane Mountain milk-vetch.

Program guidelines allow the sale of Class M lands. A substantial portion of the habitat of the Amargosa niterwort occurs within Class M lands; the disposal of parcels containing such habitat could be greatly detrimental to the conservation of the species. However, the Bureau has proposed the creation of an area of critical environmental concern to protect this species. A key strategy in protecting any species is the consolidation of land ownership. Therefore, the disposal of any lands supporting the Amargosa niterwort would be counter productive and highly unlikely.

For these reasons, this guideline is not likely to adversely affect the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant. We will not discuss program guidance with regard to land-tenure adjustment further in this document.

12. Livestock grazing: Grazing activities may be permitted on Class L and M lands; however, the Bureau has not established a grazing allotment in the area where the Ash Meadows gumplant and Amargosa niterwort are known to occur. Therefore, grazing within the ranges of these species cannot occur. Grazing historically occurred within habitat of the Lane Mountain milk-vetch; however, past consultations between the Service and Bureau regarding the effects of sheep grazing on the desert tortoise have resulted in the cessation of grazing in the areas where this plant is known to occur. A long-term resolution of the sheep grazing issue in areas inhabited by the Lane Mountain milk-vetch will be reached through the West Mojave Coordinated Management Plan.

    Because livestock grazing within habitat occupied by the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant is precluded by the Bureau's existing management, these species are not likely to be adversely affected by this aspect of the California Desert Conservation Area Plan. Consequently, we will not discuss it further in this document.

13. Mineral exploration and development: Exploration for and development of leasable minerals are allowed within Class L and M lands. Leasable materials include sodium, potassium, oil, gas, and geothermal resources. The Bureau must prepare an environmental assessment, in compliance with the National Environmental Policy Act; mitigation and reclamation measures will be required to protect and rehabilitate sensitive, scenic, ecological, wildlife, vegetation, and cultural values. In certain cases, the Bureau may proceed after the adoption of a categorical exclusion, as defined by the National Environmental Policy Act.

    Locatable materials include iron, gold, silver, talc, tungsten, zinc, rare earths, and borates. The location of mining claims is non-discretionary. Operations on mining claims within Class L and M lands are subject to 43 Code of Federal Regulations (CFR) 3809 and applicable State and local laws. The Bureau will review plans of operation for potential impact to sensitive resources; mitigation, subject to technical and economic feasibility, will be required.

    The extraction of saleable minerals, which include sand and gravel, is allowed within Class L and M lands. An environmental assessment will be required for any new materials sales location, except for instances when the adoption of a categorical exclusion is deemed appropriate. The continued use of existing areas of sand and gravel extraction is allowed, subject to permits issued by the Bureau.

14. Motorized-vehicle access and transportation: On Class L lands, new roads and ways may be developed under right-of-way grants or pursuant to regulations or approved plans of operation. Motorized vehicle use will be allowed on existing routes of travel until designation of routes is accomplished.

On Class M lands, motorized vehicle use will be allowed on existing routes of travel unless closed or limited by the authorized officer. New routes may be allowed upon approval of the authorized officer.

On Class L and M lands, the Bureau can implement periodic or seasonal closures or limit use of routes. Access will be provided for mineral exploration and development.

Within Class L lands, railroads and trams may be allowed to serve authorized uses if no other viable alternative is available. Within Class M lands, railroads and trams may be allowed.

Within Class L lands, temporary landing strips may be allowed by permit. Within Class M lands, airports and landing strips may be allowed by lease, subject to conformance with county or regional airport loans and approval by the Department of Defense and Federal Aviation Administration.

15. Recreation: Within Class L lands, the Bureau's guidelines allow for recreation which generally involves low to moderate user densities. Recreational activities can include backpacking; camping at primitive, unimproved sites; hiking; horseback riding; rockhounding; nature study; rock climbing; and non-competitive vehicle touring and events on approved routes of travel. Any organized event requires a permit specifying the conditions of use, which could include the definition of the approved routes and prohibitions, such as no pit, start, finish, or spectator areas.

Within Class M lands, the Bureau's guidelines allow for recreation which may involve moderate to high user densities. Recreational activities can include those permitted for Class L lands. Competitive events involving motorized vehicles are limited to existing routes of travel and must be approved by the authorized officer. Pit, start, and finish areas must be approved by the authorized officer. All competitive events involving 50 or more vehicles require permits.

On Class L and M lands, trails are open for non-vehicle use; new trails for non-motorized access may be allowed. The Bureau's guidelines also provide for permanent or temporary facilities for resource protection and public health and safety.

16. Waste disposal: The guidelines for Class L lands do not allow for the establishment of hazardous waste sites or new non-hazardous waste disposal sites. Because this guideline precludes adverse effects to the listed species under consideration in this biological opinion, we will not discuss it further in this document in relation to Class L lands.

Within Class M lands, public lands managed by the Bureau may not be used for disposal of hazardous or non-hazardous waste. Where locations suitable for such disposal are found on Bureau lands, these lands may be transferred to other ownership for this use.

The discussion in this section of the biological opinion on land-tenure adjustment provides a rationale for why the Bureau would not dispose of any Class M lands on which the Lane Mountain milk-vetch and Amargosa niterwort occur. For those reasons, the waste disposal guideline is not likely to adversely affect the listed species under consideration in this biological opinion; therefore, we will not discuss it further in this document.

17. Wildlife species and habitats: Within Class L and M lands, control of depredating wildlife and pests will be allowed in accordance with existing State and federal laws. Habitat may be manipulated to improve its value for wildlife. Within Class M lands, chemical and mechanical manipulation may be allowed. The reintroduction or introduction of native or established exotic species is allowed within Class L and M lands.

18. Wetlands: Within Class L and M lands, program guidance for wetland and riparian areas requires that these habitats be managed in accordance with Executive Order 11990, legislative and Secretarial direction, and Bureau manual 6470 (Wetland-Riparian Area Protection and Management). Implementation of management actions that are conducted in conformance with this guidance is expected to benefit the Ash Meadows gumplant and Amargosa niterwort. Because the Lane Mountain milk-vetch does not occur in or near wetland or riparian habitat, this guidance will not affect this species. Because this guideline is not likely to adversely affect the listed species under consideration in this biological opinion, we will not discuss it further in this document.

19. Wild horses and burros: The Bureau manages horses and burros under its jurisdiction according to the guidelines contained within the Wild and Free-Roaming Horse and Burro Act. Management activities are designed to achieve and maintain population levels that ensure healthy herds while also maintaining a thriving natural ecological balance and accommodating multiple use activities within the local area. Management of burros and horses is facilitated with the designation of herd management areas. In the draft Northern and Eastern Mojave plan, the Bureau proposes to administratively change the number of horses and burros in the Chicago Valley Herd Management Area from the current level of 28 horses and 28 burros to 12 horses and 0 burros.

The Chicago Valley Herd Management Area overlays the critical habitat unit for the Amargosa niterwort and the only one of the twelve critical habitat units of the Ash Meadows gumplant that is in California. The horses in the herd management area generally frequent the area near Death Valley Junction and, on rare occasions, may be present near the Franklin Lake playa south of the habitat of listed species; although the Death Valley Junction area is near the critical habitat of the Amargosa niterwort, the Amargosa niterwort habitat is not typically preferred by horses. Additionally, the horses rarely occupy areas where these two listed plants are present. Finally, few horses inhabit the herd management area; the amount of disturbance these individuals may cause in the

limited time they may spend within occupied habitat of the Amargosa niterwort and Ash Meadows gumplant is negligible. The Bureau has concluded and we concur that its program guidance and ongoing activities for the wild horse and burro element is not likely to adversely affect the Ash Meadows gumplant and Amargosa niterwort.

Neither horses or burros occur within areas occupied by the Lane Mountain milk-vetch. The Bureau has concluded and we concur that the wild horse and burro element will not affect this plant species. Consequently, the wild horse and burro element will not be discussed further in this document with regard to the Lane Mountain milk-vetch.

Elements

Twelve program elements provide more specific application of the multiple-use class guidelines for resources or activities that have been identified as a matter of public interest. Each element has a set of goals and planned actions and a description of how these goals and actions will be implemented and monitored. Descriptions of the twelve elements follow.

Cultural Resources Element: Historic and prehistoric remains that include, but are not limited to, paleontological resources, such as vertebrate and invertebrate fossils, historic and prehistoric routes, road side artifacts, and historic buildings are managed under this element. Typically, activities associated with this program element are designed to protect historic and prehistoric remains. The Bureau may undertake activities to stabilize or restore areas supporting cultural and paleontological resources. Locations supporting these resources may be monitored. The Bureau may also permit well-directed research at sites supporting these resources.

Native American Element: American Indian tribes have lived within the boundary of the California Desert Conservation Area for several thousand years and have left thousands of sites containing Native American artifacts such as burial remains, lithic scatter sites, and objects associated with historic or prehistoric hunting camps or long-term residences. Members of Native American tribes consider Bureau lands within the California Desert Conservation Area as part of their tribal homeland; they may wish to use these lands for a variety of activities that relate to hunting, religious worship, and the collection or cultivation of plant resources.

To protect historic and prehistoric artifacts and provide for the continued use of the desert landscape by Native Americans, the Bureau uses several tools, including land use designations (*e.g.*, Class C or L) to protect Native American artifacts and promote traditional land uses and customs and designation of Areas of Critical Environmental Concern and development of activity plans for site-specific management guidelines. The Bureau and different tribal governments also hold formal and informal discussions or communications on an irregular basis. Guidance for this element requires the Bureau to provide full consideration to Native American values in land use planning and management decisions; the Bureau has also committed to manage and protect these values whenever prudent and feasible.

Wildlife Element: The Bureau manages wildlife through a variety of mechanisms that include the development of habitat management plans or activity plans for areas of critical environmental concern, the designation of special management areas or vehicle routes, or the development of Sikes Act agreements. This element calls for baseline monitoring of certain wildlife populations and how use of the desert may be affecting this resource.

Vegetation Element: Vegetation management within the California Desert Conservation Area may include vegetation production; plant harvesting; management of rare, threatened, and endangered species; designation and management of unusual plant assemblages; and vegetation manipulation that is designed to promote the growth of desirable species such as jojoba (*Simmondsia californica*) or retard the spread of undesirable weedy plants such as salt cedar (*Tamarix ramosissima*). Vegetation production is typically a passive, naturally occurring process that is influenced by seasonal growth patterns and precipitation rates. Management of rare, threatened, or endangered species typically includes survey work designed to determine their distribution, abundance, and status. Unusual plant assemblages are plant communities that are recognized for their unusual age, size, cover, or density, or that represent a disjunct distribution. Unusual plant assemblages also include relatively rare plant assemblages that are typically associated with wetland, riparian, limestone outcrop, or sand dune habitats. Designation of an unusual plant assemblage benefits vegetation communities because these areas receive additional consideration during impact analyses.

The Bureau manages wetland and riparian areas in the California Desert Conservation Area with specific objectives to avoid long- and short-term impacts associated with their destruction, loss, or degradation and to preserve and enhance their natural and beneficial values. This management may include constraining or excluding those uses that cause significant long-term ecological damage. The Bureau has designated at least portions of the habitats of the Ash Meadows gumplant and Amargosa niterwort as the Seep and Springs, Mesquite Bosque, and Brackish Water Marsh Unusual Plant Assemblages. Because of their designation as unusual plant assemblages and the specific objectives for managing wetlands and riparian areas, we concur with the Bureau's determination that the program guidance with regard to vegetation management is likely to benefit these species.

Wilderness Element: The Bureau has concluded and we concur that its program guidance for the wilderness element is not likely to adversely affect the Lane Mountain milk-vetch, Amargosa niterwort, or Ash Meadows gumplant because these species are not located within wilderness areas. Consequently, the wilderness element will not be discussed further in this document.

Wild Horses and Burros Element: The Bureau has concluded and we have concurred that the wild horse and burro element is not likely to adversely affect the Lane Mountain milk-vetch, Amargosa niterwort, or Ash Meadows gumplant. The basis for this conclusion is discussed in the Multiple-Use Class (wild horse and burro) section of this biological opinion.

Livestock Grazing Element: We have concluded that the livestock grazing element is not likely to affect the Lane Mountain milk-vetch, Amargosa niterwort, or Ash Meadows gumplant. The basis for this conclusion is discussed in the Multiple-Use Class (livestock grazing) section of this biological opinion.

Recreation Element: This element includes activities that involve both motorized (*e.g.*, dune buggies, dirt bikes, all terrain vehicles, and other vehicles) and non-motorized recreation (*e.g.*, target shooting, land sailing, rock hounding, hiking, sight seeing, hunting, camping, bird watching, and nature study). Motorized recreation includes point-to-point travel on existing routes as part of organized events or on a casual basis; it also involves free play within designated off-highway vehicle management areas. The element also provides for the development of trails and facilities to meet visitor service needs. The Bureau has a public outreach program that is intended to provide visitors with information on the desert and increase environmental awareness; a volunteer program and maps and brochures produced by the Bureau assist in this effort. Monitoring of this visitor services program is designed to provide accurate information on levels of recreational use and adequacy of public facilities.

Motorized-Vehicle Access Element: Motorized vehicles are the primary tool that most visitors use to access various portions of the California Desert Conservation Area. The Bureau distinguishes between the use of mechanized vehicles for recreation purposes (*e.g.*, competitive events, motorcycle free-play) and the use of vehicles to convey visitors to various areas of the desert. Because funding is limited and Bureau lands in the California Desert Conservation Area are extensive, the Bureau does not intensively patrol lands under its administration to ensure that the public complies with its vehicular access guidelines. Because the species under consideration in this biological opinion do not occur on Class C and I lands, guidelines for these areas will not be discussed herein.

Motorized vehicular access on Bureau lands within the California Desert Conservation Area is managed with the aid of area and route designations. Area designations include "open," "closed," or "limited" use categories.

Areas that are classified as being "open" allow travel anywhere if the vehicle is driven in a responsible manner and private property rights are respected. Lands in this category include certain sand dunes and lake beds.

Vehicular use in "closed" areas is normally not permitted. Prohibitions against vehicular use typically apply to land in Areas of Critical Environmental Concern and Special Areas where provided for in management plans, certain sand dunes and dry lake beds, and select areas that are identified in the Bureau's Interim Critical Management Plan. This Interim Critical Management Plan established guidelines for vehicle use that are to remain in effect until routes are designated for the California Desert Conservation Area.

Vehicle use in "closed" areas may be permitted in certain cases. Fire, military, emergency, or law enforcement vehicles may be used in these areas for emergency purposes. Combat or combat support vehicles may be used for national defense purposes. Finally, vehicle use may be expressly authorized by an agency head under a permit, lease, or contract; and when vehicles are used for official purposes by employees, agents, or designated representatives of the federal government or one of its contractors.

In "limited" use areas, motorized-vehicle access is allowed only on certain "routes of travel" which include roads, ways, trails, and washes. At a minimum, vehicle use is restricted to existing routes of travel. An existing route of travel is a route that existed before the approval of the California Desert Conservation Area Plan in 1980. These routes must have had a minimum width of 2 feet, showed substantial surface evidence of prior vehicle use, or, for washes, had a history of prior use.

Vehicle access in "limited" use areas is further modified by different land use classifications. Within Class M lands, access is limited to existing routes, unless the Bureau has determined that use on specific routes must be limited further. Within Class L areas, vehicle access is directed toward use of approved routes of travel. Approved routes include primary access routes intended for regular use and for linking desert attractions for the general public and secondary access routes intended to meet specific user needs. In Areas of Critical Environmental Concern where vehicle use is allowed, vehicle access will be managed under the guidelines for Class L lands.

Stopping, parking, and vehicular camping along "routes of travel" is limited to within 300 feet of a route. In some locations, specific parking or stopping areas may be signed "open" or "closed" to protect fragile or sensitive resources adjacent to the route or to provide a safe place to stop.

Vehicle use in desert washes is governed by the local area designation. Vehicle use in desert washes is prohibited in areas that have been designated as being "closed." Vehicle access in desert washes is permitted in areas that are designated as being "open." In all "limited" use areas, vehicle use in desert washes will be controlled according to the travel restrictions that are applicable to the local multiple-use class category. In addition, washes may have travel restrictions (*e.g.*, speed limits or seasonal closure) that are designed to protect resources found in or along the wash or to minimize conflicts with other uses.

The Bureau may post signs that describe the approved type of motorized vehicle access (open, closed, limited) that applies to a given area. The Bureau will also, with public involvement, determine which routes in Class L or M lands need to be closed or limited in some way. Routes not approved for vehicle access would, in most instances, be obliterated, barricaded, signed, or otherwise marked.

In areas with mining operations, additional access needs are managed in accordance with the Bureau's Exploration and Mining-Wilderness Review Program regulations (43 CFR 3802) and the Surface Management of Public Lands Under the U.S. Mining Laws (43 CFR 3809). Access

needs for other uses, such as roads to private lands, grazing developments, competitive events, or communication sites, are permitted on an individual basis under Federal Land Policy and Management Act guidelines and other appropriate regulations.

Geology, Energy, Minerals Resources Element: Forty-six mineral commodities, including some of national and international importance, are known to exist in the California Desert Conservation Area. Substantial resources of geothermal energy are also present in the California desert. In the California Desert Conservation Area, approximately 360 exploration and mining plans of operation are active; approximately 22 of the mining and 5 to 10 of the exploration operations that are currently active have substantial development footprints.

Most exploration and development activity on public lands in the California Desert Conservation Area is guided and authorized under the General Mining Law of 1872 (30 U.S.C. 22 *et seq.*). Other applicable laws that regulate extraction and exploration for mineral resources include the Mineral Leasing Act of 1920 (30 U.S.C. 181 *et seq.*), Geothermal Steam Act of 1970 (30 U.S.C. 1001 *et seq.*), and the Materials Act of 1947, as amended (30 U.S.C. 701 *et seq.*). Collectively, these laws allow use of surface resources provided that the activities comply with appropriate federal and state laws and rules. Regulations developed pursuant to the Federal Land Policy and Management Act (43 CFR 3802 and 3809) guide the Bureau in managing surface operations under the mining laws for purposes of preventing undue or unnecessary degradation to public land and undue impairment to public lands and resources in the California Desert Conservation Area.

The Code of Federal Regulations addresses three distinct levels of mining law. Text appearing in the 1980 California Desert Conservation Area Plan has been revised to include changes that were addressed in the revised surface management regulations at *43* CFR 3809, published in the *Federal Register* on January 20, 2001, and amended in October 2001. The new regulations affect three distinct levels of mining operations based on surface disturbance and degree of impact in sensitive areas. These include casual use, notices, and plans of operation.

Casual Use: Casual use is defined as activities causing no or negligible surface disturbance to public lands or resources. Mining conducted under the casual use category includes the collection of geochemical, rock, soil, or mineral specimens using hand tools, hand panning, sluicing, and small portable suction dredges. It also generally includes use of metal detectors, gold spears and other battery-operated devices for sensing the presence of minerals, and hand and battery-operated drywashers. Operators may use motorized vehicles for casual use activities provided the use is consistent with the regulations governing such use, off-road vehicle use designations contained in land-use plans, and the terms of temporary closures ordered by the Bureau. Because of the guidelines in the California Desert Conservation Area Plan, vehicles cannot be operated off roads as part of the casual use provisions of the mining regulations within habitat of the three species under consideration in this biological opinion. Casual use does not include use of mechanized earth-moving equipment, truck-mounted drilling equipment, motorized vehicles in areas when designated as closed to "off-road vehicles," chemicals, or

explosives. It also does not include "occupancy" or operations in areas where the cumulative effects of the activities result in more than negligible disturbance. Mining activity conducted under the casual use category does not require that the operator notify the Bureau or acquire its approval prior to conducting field activities. Operators must reclaim any casual-use disturbance that is created during their activities. If activities do not qualify as casual use, an operator must submit a notice or plan of operation, whichever is applicable.

Where the cumulative effects of casual use by individuals or groups have resulted in, or are reasonably expected to result in, more than negligible disturbance, the Bureau's State Director may establish specific areas as he or she deems necessary. In such cases, any individual or group intending to conduct activities under the mining laws must contact the Bureau 15 calendar days before beginning activities to determine whether the individual or group must submit a notice or plan of operation.

Notices: Operations under a notice are limited to exploration activity and involve surface disturbances greater than those associated with casual use. Actions associated with this category involve sampling, drilling, or developing surface workings to evaluate the type, extent, quantity, or quality of mineral values present. Exploration does not include activities where material is extracted for commercial use or sale.

Notices are not allowed on "any lands or waters known to contain federally proposed or listed threatened or endangered species or their proposed or designated critical habitat, unless [the Bureau] allows for other action under a formal land-use plan or threatened or endangered species recovery plan" (43 CFR 3809.11(c)(6)). None of the Bureau's land-use plans in the California Desert Conservation Area provide for the use of notices in habitat of threatened or endangered species. For these reasons, operations conducted under a notice are not likely to adversely affect the listed species under consideration in this biological opinion. We will not discuss notices further in this document.

Plan of Operation: A Bureau-approved plan of operation is required before the initiation of exploration or mining activities that are greater than casual use or are acceptable under a notice. A plan of operation is required for any bulk sampling in which the operator will remove 1,000 tons or more of presumed ore for testing. A plan of operation is required for any operations causing surface disturbance greater than casual use in the following special status areas that occur within habitat of the three plant species being considered in this biological opinion:

1. lands designated as Class C or L,
2. designated areas of critical environmental concern,
3. areas designated as "closed" [under regulations at 43 CFR 8364 and published in the *Federal Register*] to off-road vehicle use [meaning cross-country travel], and
4. any lands or waters known to contain federally proposed or listed threatened or endangered species or their proposed or designated critical habitat, unless the Bureau allows for other action under a formal land-use plan or recovery plan.

The plan of operation must contain a complete description of the entire mining operation. Pertinent information in the plan will include, but not be limited to, the location and spatial extent of the proposed mining operation, the type of equipment that will be used to extract ore, a map showing the location of the project area in sufficient detail for Bureau staff to be able to find it and the location of access routes intended to be used, improved, or constructed during the mining activity, the type of support facilities, location of drill sites (to the extent possible), measures to prevent unnecessary or undue degradation, and a reclamation plan for the land involved. The plan of operation must demonstrate that the proposed operations would not result in unnecessary or undue degradation, or undue impairment to public lands in the California Desert Conservation Area.

Under the mining regulations, lands affected by all operations will be reclaimed, regardless of whether the operations are conducted under the casual use category, under a notice, or under a plan of operation. Regulations for reclamation activities are provided in 43 CFR 3809.1-3(d) and include guidance regarding the development of access routes; disposal of tailings, dumps, deleterious materials or substances, and other waste produced by the operations; reclamation of the disturbed area; and inspection of the reclaimed area.

Approval of any plan of operation will be subject to changes or conditions that are necessary to meet the performance standards and to prevent unnecessary or undue degradation. The Bureau may require the operator to incorporate into the plan of operation other agency permits, final approved engineering designs and plans, or other conditions of approval. No operations may be conducted until the Bureau approves the plan of operation and receives the financial guarantee.

Extraction of geothermal, oil, and gas reserves may also take place on Bureau lands. Areas that may contain geothermal resources may be designated as a "known or potential geothermal resource area."

All operating plans are reviewed to ensure that the compliance guidelines of the National Environmental Policy Act are met. An operating plan may be conditioned and required to proceed with stipulations, modifications, or amendments that are developed through the process of environmental review. Plans are stipulated to bring the operation into compliance with the requirements regarding undue or unnecessary degradation and undue impairment, and to ensure protection of natural resources, reasonable reclamation, and proper conservation of the mineral resource. Policy directs that all operating plans and operations conducted on public land be inspected to ensure compliance with the terms of approval, regulations, and statutes.

Reclamation includes those activities associated with recontouring waste piles, reshaping pit walls and other excavations, removal of permanent or temporary facilities or structures, and soil placement, preparation, and in some cases, reseeding and maintenance of plants. Reclamation may also include any measures required to enhance or facilitate enhancement of previously disturbed areas or to modify areas to facilitate or accept displaced wildlife. As related to assuring

a diverse and complete habitat as existed before operations, restoration of the area may be required. This normally entails inventory and consideration of the local biological features and the development of measures and time frames to ensure complete recovery, if required.

The Bureau requires that operators post a bond for surface disturbing operations conducted under a notice, plan of operation, or activity conducted under the Mineral Leasing or Materials Acts. The bond is required to cover liability for reclaiming disturbances approved in the plan of operation.

Mineral leasing, or any other activity, will require an environmental analysis pursuant to the National Environmental Policy Act unless exempted. Activities affecting a threatened or endangered species will not qualify for an exemption (*i.e.*, categorical exclusion) from this requirement. Mineral material sales in Class L and M lands are processed under 43 CFR 3600. If a new extraction area in a Class L area is expected to be larger than 5 acres in size, documentation pursuant to the National Environmental Policy Act will be prepared to cover the entire area of potential extraction.

No mining operations will be allowed if such activity would cause unnecessary or undue degradation.

Energy Production and Utility Corridors Element: The Bureau has concluded and we have concurred that the portion of this element regarding utility corridors is not likely to adversely affect the Lane Mountain milk-vetch, Amargosa niterwort, or Ash Meadows gumplant. The basis for this conclusion is discussed in the Multiple-Use Class (transmission facilities) section of this biological opinion.

The Bureau may also allow the siting of microwave tower sites, and conventional, solar, geothermal, wind, and nuclear power plants on Bureau lands within the California Desert Conservation Area.

Land-Tenure Adjustment Element: This element is not likely to adversely affect the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant for the reasons discussed in the Multiple-Use Class (land-tenure adjustment) section of this biological opinion.

Special Management Areas

The third major management tool that is used for planning and management purposes in the California Desert Conservation Area Plan involves the designation of special management areas, such as Areas of Critical Environmental Concern or other Special Areas. Other areas which possess rare, unique, or unusual qualities of scientific, educational, cultural, or recreational significance may be designated as research natural areas, outstanding natural areas, other natural areas, national natural landmarks, national historical landmarks, national register of historic

places, historic American engineering records, national scenic trails, national historic trails, man and biosphere reserves, and recreation lands.

After an area has been formally designated as an area of critical environmental concern or other Special Area, a site-specific activity plan is prepared. Activity plans vary in size and complexity depending on the nature of the resources and uses within the area of critical environmental concern. Activity plans clearly identify the ongoing management objectives for the area of critical environmental concern. The activity plan also includes a description of types of future uses, activities, or management practices considered compatible with the purposes of the area of critical environmental concern and a description of any existing incompatible uses, activities, or practices within the area. The plan also provides a schedule for implementing management goals. The activity plan includes the details of implementing the special management requirements, such as patrol schedules, posting signs, patrolling, and fencing specifications for facilities. Plans are prepared by interdisciplinary teams that consider all of the resources and uses present. Plans are subject to public review and environmental analysis.

Development, when wisely planned and properly managed, will take place in areas of critical environmental concern if the basic intent of protection of historic, cultural, scenic, or natural values is assured. In the case of certain wildlife and cultural resources, surface disturbances from mining, motorized-vehicle access, and grazing or other uses will be controlled. In some cases, fencing may be used to prevent unintentional impacts. Some valuable wildlife resources will require assistance in the way of reducing or eliminating competition for water sources or forage. Directional signs and visitor use areas will be developed and designated to encourage visitor cooperation; informational facilities and interpretive programs will be developed to increase visitors' knowledge of and sensitivity to the protective needs of important natural and cultural resource values. Consultation with the adjacent land owners will be conducted when areas of critical environmental concern and their management may conflict with adjacent owners' land uses and requirements.

Management prescriptions for areas of critical environmental concern may override the multiple-use class guidelines for the local area. The Bureau monitors existing conditions within an area of critical environmental concern to ensure that resource degradation is not occurring. Monitoring data will be used to guide corrective actions that may be necessary.

In summary, areas of critical environmental concern and other special areas are established to conserve specific resources; the presence of a listed taxon within such an area would prompt the development and implementation of management to conserve that taxon. Therefore, the program guidance for special management areas is not likely to adversely affect the Lane Mountain milk-vetch, Ash Meadows gumplant, or Amargosa niterwort. The program guidance for this basic component of the California Desert Conservation Area Plan will not be discussed further in this biological opinion.

Management Actions associated with the Proposed Northern and Eastern Mojave Bioregional Plan

The draft Northern and Eastern Mojave bioregional plan proposes specific management actions that relate to the Amargosa niterwort and Ash Meadows gumplant. The Bureau proposes to create a Lower Carson Slough Area of Critical Environmental Concern. The 4,340-acre area of critical environmental concern would include one critical habitat unit that has been designated for each of the two species and would be dedicated to conservation of special status plant populations, Amargosa River watershed values, ephemeral wetlands, mesquite bosques and riparian areas. The area of critical environmental concern would include 1,200 acres of critical habitat of the Amargosa niterwort, 340 acres of critical habitat of the Ash Meadows gumplant, and 2,800 acres along the Lower Carson Slough that would provide linkage between the two critical habitat units.

Management of the proposed Lower Carson Slough Area of Critical Environmental Concern would be governed by the following principles:

1. The Bureau proposes to manage the Lower Carson Slough Area of Critical Environmental Concern according to a management plan that would be designed to accomplish conservation objectives for special status plants and riparian, ephemeral wetland and mesquite bosque habitats.

2. The management strategy for managing the Lower Carson Slough Area of Critical Environmental Concern would be integrated with the strategy for managing the proposed Amargosa River Area of Critical Environmental Concern.

3. The management plan for the Lower Carson Slough Area of Critical Environmental Concern would be completed within 3 years and would include consultation, pursuant to section 7 of the Act, with the Service if the scope of actions so warrants. The management plan would:

    A. Identify the location of listed species and develop appropriate measures to protect them;
    B. Develop a monitoring program for and determine the habitat needs of the Amargosa niterwort and Ash Meadows gumplant;
    C. Implement route designations;
    D. Develop a strategy for conserving and monitoring ephemeral wetlands, mesquite bosques, and riparian areas in cooperation with adjacent private landowners and other federal, state, and local agencies;
    E. Identify mechanisms to track progress in reaching population and recovery goals of the listed species;
    F. Develop guidelines for road construction and other activities adjacent to listed plant populations;

G. Administratively change the appropriate management level for wild horses and burros to 12 horses and 0 burros to reflect the current management strategy; and
H. Delineate the Amargosa aquifer and develop a strategy in cooperation with other Federal, State, and local agencies to safeguard surface and groundwater flows.

As a result of the settlement agreement with the Center for Biological Diversity, the Bureau constructed, in the fall of 2001, a barbed wire fence on both sides of Stateline Road between the towns of Death Valley Junction, California and Pahrump, Nevada. The total length of the fence is approximately 3 miles; its western edge terminates approximately 2 miles east of Death Valley Junction. Each end of the fence possesses a section that angles away from the road at approximately 30 degrees. These fence sections are meant to create an appearance that the fence encloses a particular area and prevents entry by vehicles.

STATUS OF THE SPECIES

Lane Mountain Milk-vetch

The Lane Mountain milk-vetch was listed as endangered on October 6, 1998 (63 *Federal Register* 53596); critical habitat has not been designated. A recovery plan is currently being prepared.

The Lane Mountain milk-vetch is a perennial plant species in the pea family. It is a slender, diffuse plant, 12 to 27.5 inches tall, with straggling, freely branched stems that arise from a buried root-crown (Barneby 1964). Herbage is light-gray or greenish, strigulose with short, fine, straight hairs. The flowers, 5 to 15 per stalk, are cream to purple, or lighter with veins of a deeper color. Fruits are pencil-shaped, linear, smooth, and pendant, 0.6 to 1 inch long.

Plants of this species typically grow under and entangled within the canopy of low shrubs. Few plants have been observed in the open. Most of the host species are intricately branched low shrubs, but a few of the observed hosts were bunch grasses (*Stipa* sp.) and subshrubs such as Mojave aster (*Machaeranthera tortifolia*) and wishbone bush *(Mirabilis bigelovii*). Host plants were usually living, although a few hosts have been dead shrubs.

The Lane Mountain milk-vetch appeared to have a very short growing period in a very dry years (Bagley 1989). The perennial rootstock may allow the Lane Mountain milk-vetch to survive occasional dry years, while longer periods of drought might be endured by remaining dormant (Beatley in Bagley 1989).

The Lane Mountain milk-vetch is known only from San Bernardino County, California, in a small area in the west Mojave Desert to the west and northeast of Lane Mountain. Approximately one-sixteenth of the area occupied by the known occurrences of this species is located within the boundaries of the U.S. Army's National Training Center and Fort Irwin. By legislation passed in late 2001, jurisdiction over approximately 110,000 acres adjacent to the

western boundary of Fort Irwin were transferred to the Army. This area, which is no longer managed by the Bureau, supports approximately one-half of the area occupied by the known occurrences of this species. The remainder of the area occupied by known occurrences, which appears to be somewhat less than one-half of the known occupied habitat, is on Bureau and private lands to the west and southwest of Fort Irwin. (This quantification should be considered preliminary; the Army has not provided any detailed information on the results of its survey work on this species.) The entire known range of Lane Mountain milk-vetch occurs within an area of land that is approximately 16 miles in diameter. Based on the available historic and recent information, the Lane Mountain milk-vetch does not appear to have been more widespread than is currently known; no extirpations of population have been documented.

The Lane Mountain milk-vetch is known to occur at elevations of approximately 3,150 to 3,850 feet. It is most frequently found within Mojave creosote bush scrub (Holland 1988, Cheatham and Haller 1975) or creosote bush series (Sawyer and Keeler-Wolf 1995). The scrub community at Lane Mountain milk-vetch sites is typically a diverse mix of shrub species. Brandt *et al.* (1997) characterized milk-vetch sites as areas with Nevada Mormon tea (*Ephedra nevadensis*) and Cooper goldenbush (*Ericameria cooperi*) dominant and where the shrub density is greater than in surrounding areas.

The Lane Mountain milk-vetch occurs on rocky, very low ridges, only a foot or two higher than the main bajada slope, and rocky low hills, 10 to 20 feet high, where bedrock is exposed or probably near the surface (Lee and Ro Consulting Engineers 1986). It appears to be largely confined to granitic substrates.

The Lane Mountain milk-vetch typically blooms in April and May. Nothing further is known of the reproductive biology of this species.

In the spring and summer of 2001, the U.S. Army conducted extensive surveys for the Lane Mountain milk-vetch. During these surveys, approximately 6,000 individuals of the Lane Mountain milk-vetch were detected. Based on calculations that considered the distribution and abundance of plants within the areas that were surveyed and the amount of other potentially suitable habitat, the Army has predicted the total number of individuals to be approximately 19,000 (Wertenberger, pers. comm.). In general, the plants were found in and around areas where they had previously been known to exist. The Army has yet to release a final report on the survey efforts; therefore, this information should be considered as preliminary.

The species was listed because of threats related to habitat destruction from dry wash gold mining, other mining activities (materials lease mining), rock and mineral collecting, off-highway vehicle activity, and potentially from increasing fire frequency and any associated fire suppression activities. The expansion of Fort Irwin was also identified as a potential threat. Sheep grazing has not occurred within the habitat of this species since 1989 as a result of a consultation between the Service and Bureau regarding the desert tortoise.

At the time the proposed rule was being prepared, the Army conducted some vehicular use within its habitat at the National Training Center. Since that time, the Army has installed protective fencing between at least one site supporting the Lane Mountain milk-vetch and a vehicle route; we are unaware how individuals of this species in other locations at Fort Irwin may be affected by the Army's activities.

Ash Meadows Gumplant

The Ash Meadows gumplant was federally listed as a threatened species with designated critical habitat on May 20, 1985 (50 *Federal Register* 20777). The Service (1990) has completed a multi-species recovery plan that includes the Ash Meadows gumplant.

The Ash Meadows gumplant is an erect, biennial or more often perennial, herb of the sunflower (Asteraceae) family. Plants are 2.3 to 3.3 feet in height and the leaves and stems are glabrous-resinous (sticky). It has one to three smooth, leafy, tan-reddish stems arising from a woody root-stock. The dark green leaves are leathery, generally oblanceolate-oblong, acute, and entire-serrate toward the top. The inflorescence is openly branched with several heads on the terminal branchlets. The yellow flowers consist of heads measuring approximately 0.3 inch, with approximately 15 disk flowers and 13 ray flowers. In bud, the disk flowers are covered with a white gum-like substance. The phyllaries are resinous dotted and the fruit is an achene, approximately 0.1 inch long, with two stout awns.

Flowering occurs from June through October (Beatley 1976). Seed dispersal could occur by means of wind or water and possibly by mammals or birds. The pollinators for this species are unknown at this time (Cochrane 1981).

The Ash Meadows gumplant is known only from moist, meadow habitats along the Carson Slough drainage in Nevada and California, from Ash Meadows National Wildlife Refuge in Nevada downstream to Franklin Playa, California. Exhaustive surveys to determine the precise distribution of the Ash Meadows gumplant have not been completed. Known occurrences in California are predominantly located on Bureau lands; it may also occur on land that is owned by the State of California.

The Ash Meadows gumplant primarily occurs in saltgrass meadows along streams and surrounding pools in the vicinity of ash-screwbean-mesquite woodlands and desert shadscale scrub vegetation. It occasionally occurs on open alkali clay soils in drier shadscale habitats or in clay barrens where groundwater is at or near the surface and where other Ash Meadow endemics are found. It is quite robust in marshy areas along some dirt roads where runoff accumulates and saturates soils throughout a longer portion of the year. The Carson Slough occurrences grow in full sunlight and in the lowest topographic areas associated with water (Cochrane 1981).

The dominant plant species that co-occurs with the Ash Meadows gumplant is saltgrass (*Distichlis spicata* var. *stricta*) and the common associates within this saltgrass meadow type

community include spring-loving centaury (*Centaurium namophilum*), seep willow (*Baccharis emoryi*), yerba mansa (*Anemopsis californica*), western niterwort (*Nitrophila occidentalis*), loosestrife (*Lythrum californicum*) and iva (*Iva acerosa*). In the wooded areas, and on the drier sites, the common associates include velvet ash (*Fraxinus velutina* var. *coriacea*), screwbean mesquite (*Prosopis pubescens*), shadscale (*Atriplex confertifolia*), alkali sacaton (*Sporobolus airoides*), alkali goldenbush (*Isocoma acradenia*), rabbitbush (*Chrysothamnus albidus*), seepweed (*Suaeda* sp.), and other saltbush (*Atriplex* sp.) species.

This species also appears to colonize recently disturbed areas, almost appearing weed-like, along roadsides adjacent to meadows. The quick colonization may be due to the removal of the usual associated plant competitors (Cochrane 1981, Reveal and Beatley 1971, Mozingo and Williams 1980).

Critical habitat includes 12 discontinuous areas that collectively include 1,968 acres (Service 1990). Primary constituent elements were not identified at the time critical habitat has designated but the final rule suggested that the critical habitat delineation was based on the presence of saltgrass meadows along streams and pools or drier areas with alkali clay soils. The designated critical habitat in California, which covers approximately 340 acres, is limited to land that is managed by the Bureau.

Current threats to the Ash Meadows gumplant include reduced or re-channeled spring outflow caused by adjacent land development or water diversion and the disturbance and loss of the limited habitat available to this species from camping, staging areas, road maintenance and mining activities. Although the Chicago Valley Herd Management Area overlaps the California portion of the critical habitat of this species, the horses concentrate their use in xeric areas that are not occupied by the Ash Meadows gumplant; this species inhabits more mesic areas approximately five miles from where the horses usually gather. Consequently, for this reason and because of the low number of horses, impacts from horses are most likely negligible. The potential exists for the establishment and spread of salt cedar, which displaces native plants, alters the composition and structure of native plant communities, and generally eliminates surface water and moist soil regimes in wetland and meadow habitats. If this exotic plant were to become well established in the vicinity of Ash Meadows gumplant populations, the surface water necessary for this species to survive and associated habitat could be affected. The one square mile of State land within California that may be occupied by this species has not historically been subject to development or disturbance.

Amargosa Niterwort

The Amargosa niterwort was listed as endangered, with critical habitat, on June 19, 1985 (50 *Federal Register* 20777). The Service (1990) has completed a multi-species recovery plan that includes this species. The Amargosa niterwort is also listed by the State of California as endangered.

The Amargosa niterwort is a small, erect perennial with an extensive, heavy, underground rootstock. The stems are glabrous, pinkish, compactly branched, and up to approximately four inches tall. The leaves clasp the stem in opposite pairs, are rounded-ovate, somewhat succulent, concave in the upper portion, up to 0.1 inch long, and pointed at the ends. Perfect flowers are mostly single in the axils of the upper leaves and are composed of sepals only. The calyx is less than 0.1 inch long and rose-colored when fresh. Each flower has one small, shiny black seed. Seed viability, longevity, dormancy and germination requirements are unknown (Reveal 1978).

Plants can over-winter as underground rootstocks, with new plants starting to be formed in March. Flowering occurs from late April to October.

The known distribution of the Amargosa niterwort is confined to the Amargosa River drainage along the California-Nevada border. The majority of plants within Nevada are contained within the boundary of the Ash Meadows National Wildlife Refuge. A limited number of plants in Nevada also occur on Bureau lands immediately west of the boundary of the national wildlife refuge. The remaining distribution of the species occurs within the California Desert Conservation Area boundary. Surveys for the species have been conducted along the lower reaches of the Amargosa River within the boundary of Death Valley National Park, but no plants were found (Service 1996). Exhaustive surveys to determine the precise distribution of the Amargosa niterwort have not been completed. Known occurrences in California are predominantly located on Bureau lands; it may also occur on land owned by the State of California.

The Amargosa niterwort occurs on open, highly alkaline mudflats and low sand around alkali sink vegetation lacking appreciable standing water and supporting very little vegetation, with extensive salt crust development. This habitat is composed of highly saline and alkaline soils that are hydrated to varying degrees by seepage from freshwater springs that lie many miles to the north and east in Ash Meadows, Nevada (Beatley 1977). One of these alkaline flats is located at Franklin Playa, California, near where the Lower Carson Slough meets the Amargosa River. The Amargosa niterwort is found at elevations of 1,970 to 2,460 feet. Associated plants include shadscale, Parry's saltbush (*Atriplex parryi*), iva, Tecopa bird's-beak (*Cordylanthus tecopensis*), short-pedicelled cleomella (*Cleomella brevipes*), pickleweed (*Allenrolfia occidentalis*), and saltgrass.

The critical habitat, which includes 1,200 acres, occurs within one contiguous block. Primary constituent elements were not identified at the time critical habitat was designated but the final rule suggested that the critical habitat delineation was based on the presence of salt-encrusted alkaline flats. The designated critical habitat in California is limited to land that is managed by the Bureau.

The Amargosa niterwort was listed because the plant has a small geographic distribution that experienced off-road vehicle activity, nearby mining activity, and effects associated with groundwater depletion. The restricted range of this species makes it susceptible to natural

catastrophic events such as flooding and drought, as well as the genetic and demographic consequences of small populations. Potential threats to the species include local groundwater depletion; streambed alteration; road maintenance; mining, including exploratory drilling and claim marker placement; and cross country vehicle travel. The potential introduction and spread of salt cedar poses an additional threat to this species. Salt cedar has not been observed near Franklin Playa to date, although it occurs downstream on the Amargosa River in the vicinity of Grimshaw Basin. Although the Chicago Valley Herd Management Area overlaps the critical habitat of this species, the horses concentrate their use in xeric areas that are not occupied by the Amargosa niterwort; this species inhabits more mesic areas approximately three miles from where the horses usually gather. Consequently, for this reason and because of the low number of horses, impacts from horses are most likely negligible. The one square mile of State land within California that may be occupied by this species has not historically been subject to development or disturbance.

ENVIRONMENTAL BASELINE

Lane Mountain Milk-vetch

The Lane Mountain milk-vetch is currently known to occur in two general areas separated by Lane Mountain. A small portion of the more northerly occurrence remains on public lands on the northeastern flank of Lane Mountain; this occurrence continues to the northeast of the Paradise Range from Paradise Valley to the area of the Montana Mine on lands now managed by the Army. The second area is located west of Lane Mountain in an area known as Coolgardie Mesa; it extends south and west to the eastern flanks of the Mud Hills.

This baseline does not consider those individuals of the Lane Mountain milk-vetch occurring on lands that were recently transferred by legislation to the Army. Most of the habitat of this species that remains on public lands is managed as Class M; a small portion of known occupied habitat near the northeastern-most corner of the Mud Hills may be within an area managed as Class L. Some plants within the California Desert Conservation Area are also likely to occur on private lands. The acreage of known occupied habitat has not been quantified.

Ash Meadows Gumplant

Within the California Desert Conservation Area, the Ash Meadows gumplant is only known to occur within the 340-acre area of critical habitat located along the border between California and Nevada. This area is located 2.5 to 3.5 miles north of Stateline Road that connects the towns of Death Valley Junction, California and Pahrump, Nevada. All of the area occupied by the species in California is Class L land. Encompassing Lower Carson Slough and Franklin Playa, these lands have been designated as the Brackish Water Marsh Unusual Plant Assemblage (Bureau 1999).

Numerous markers representing mining claims are located in the Death Valley Junction area where the Ash Meadows gumplant occur. In 1989 or 1990, vehicle use in an area with mining claim markers resulted in numerous off-road vehicle tracks one mile south of the Ash Meadows gumplant occurrences (Threloff, pers. comm.).

In 1995, approximately 15,000 acre-feet of groundwater were pumped in the Amargosa Desert, which is the area that supports the Ash Meadows gumplant. More than 40,000 acre-feet per year of permitted and certificated water rights currently exist within the basin (Pal Consultants, Inc. 1997). The permitted and certificated water rights in the Amargosa Desert exceed the perennial yield of the local aquifer by a magnitude of 200 to 300 percent (Essington, pers. comm., 2000). People are moving to the Amargosa Basin in increasing numbers; most, if not all, of the water needed for human use in this area is dependant on groundwater. The groundwater pumping that is already occurring is likely lowering the water table in various areas of the basin. These water withdrawals will degrade habitat of the Ash Meadows gumplant; the potential exists that such degradation has already begun.

Amargosa Niterwort

The distribution of the Amargosa niterwort is limited to lands within the Northern and Eastern Mojave Desert bioregional planning area. The geographic distribution of the species in California consists of two disjunct populations. The majority of plants are present in a north-south trending polygon located two to three miles east of the town of Death Valley Junction. This area was designated as the Brackish Water Marsh Unusual Plant Assemblage by the Bureau in 1980 and as critical habitat by the Service. The critical habitat is bisected by Stateline Road. No other roads in this area are currently available to vehicle travel; pedestrian use by the public in the area where the plants occurs is very infrequent. The known range of the species was recently extended approximately one mile further south of its previously known location (Knight 1990).

The second occurrence of the Amargosa niterwort is in the Tecopa Hot Springs area, in close proximity to or on lands managed by the Bureau. This area has been developed through one or more Bureau-authorized leases that have been issued to the County of Inyo. The leased public lands include a 2-unit bathhouse facility, a 251-unit commercial campsite, community center, entrance roads, parking lots, four public restrooms, numerous out buildings and electrical hookups, at least one active sewage lagoon, and water piping between the various facilities (Bureau 2001b). These facilities generally serve the recreational pursuits of the local public and retirees that tend to stay in the area during the winter months. The Amargosa niterwort was documented as occurring within 300 feet of the northern edge of the active sewage lagoon in 1986 (California Natural Diversity Database 2000). The Bureau-leased lands are within an area designated as Class L.

In 1986, 1991, and 1994, 500 to 1,500 individuals of the Amargosa niterwort were found in the Tecopa area in 2 areas a few hundred feet north and northeast of the Tecopa Hot Springs

Community Center (California Natural Diversity Database 2000). The ownership of the lands where these occurrences are located has not been determined, but the plants that are located 0.2 mile northwest of the community center likely occur on Bureau-managed lands. The Amargosa niterwort was not found during recent surveys in this location (Threloff, pers. comm.). The historical distribution of the Amargosa niterwort in the Tecopa Hot Springs area was probably much larger than what currently exists because substantial portions of the local landscape have been altered by the development and use of the bath houses.

Numerous markers representing mining claims are located in the Death Valley Junction area where the Amargosa niterwort occurs. In 1989 or 1990, unauthorized vehicle use where mining claim markers are present resulted in numerous off-road vehicle tracks in areas where the Amargosa niterwort is present (Threloff, pers. comm.).

Stateline Road traverses critical habitat of the Amargosa niterwort and lands managed by the Bureau. The road is periodically subject to maintenance activities that are approved by the Bureau and conducted by the County of Inyo. In the course of completing these road improvement projects during the past 10 years, road graders and front-end loaders have strayed from the pavement and onto suitable habitat of the Amargosa niterwort.

Lands supporting the species near Franklin Playa have been damaged previously by unauthorized mineral exploration and installation of claim markers (Knight 1990). A herd of fewer than 10 wild horses (Chicago Valley Herd Management Area) are known to inhabit these same public lands because an artesian water source is located nearby. This wild horse herd is managed under objectives outlined in the Chicago Valley Herd Management Area Plan. No trampling impacts to the species have been noted to date, though this possibility exists.

The critical habitat of the Amargosa niterwort includes 1,200 acres. Approximately 360 acres are Class M lands; the remainder occurs on Class L lands. This occurrence also extends to the south of the critical habitat boundary within Class M lands; the acreage of the remainder of this occurrence has not been determined. The entire critical habitat unit is not occupied and is not suitable habitat for this species. The Amargosa niterwort at Tecopa Hot Springs is also located on Class L lands; the size of this occurrence has not been determined.

The groundwater pumping described in the previous section of this biological opinion is also likely to affect the Amargosa niterwort. We do not know, at this time, the historic extent of the Amargosa niterwort occurrences in this area and how groundwater withdrawals may have affected them.

EFFECTS OF THE ACTION

We conducted our analysis in a stepwise fashion. We begin our analysis with a general description of how various anthropogenic activities could affect the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant and their habitats.

We then review how the overall management direction provided by the California Desert Conservation Area Plan, as amended and modified, could affect the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant. The California Desert Conservation Area Plan provides program guidance to the Bureau for its activities within the California desert; the multiple-use classes and elements of the California Desert Conservation Area Plan direct how the Bureau balances resource conservation and use. The California Desert Conservation Area Plan also provides the fundamental authorization for many ongoing activities, such as casual recreational use, that do not require site-specific analysis by the Bureau. We did not analyze the effects of any site-specific future actions. As the California Desert Conservation Area Plan notes, site-specific actions may be allowed after they are analyzed pursuant to the National Environmental Policy Act; the Bureau must also comply with section 7(a)(2) of the Act when it is considering these future actions.

Finally, the Bureau's proposed action includes certain modifications to the California Desert Conservation Area Plan, as amended. These modifications are the consultation on sheep grazing for the desert tortoise between the Service and Bureau, the Bureau's proposed interim measures, and the actions proposed in the draft Northern and Eastern Mojave bioregional plan. In some cases, these modifications have altered the manner in which the California Desert Conservation Area Plan may have affected the listed species being considered in this consultation. Where these modifications have eliminated the likelihood of adverse effects, we have noted this situation in the Description of the Proposed Action section of this biological opinion and will not repeat the analysis herein. An example of this situation has occurred with the livestock grazing element with regard to the Lane Mountain milk-vetch; because a previous consultation has caused the cessation of sheep grazing within habitat of the Lane Mountain milk-vetch, we will not reconsider the potential effects of that activity on the species.

Our consideration of the overall effects of the Bureau's program guidance on listed species includes, at least to some degree, an evaluation of how likely an action is to occur. For example, the pumping of groundwater from an area that does not contain groundwater is not likely to occur; therefore, even though the program guidance and multiple-use class may allow this activity, it would not occur.

Additionally, the Bureau would consult on each future action that it proposes to approve, undertake, or fund, pursuant to the requirements of section 7(a)(2) of the Act. The potential exists that, in this biological opinion, we may find that the Bureau's guidance is not likely to jeopardize the continued existence of a species, but that a specific action may be proposed in the future that could result in a finding of jeopardy. Such a circumstance could occur if advances in technology or changes in economics alter the feasibility of a specific project. For example, deep groundwater may be economical to pump only for a project proponent with large amounts of capital expecting a large financial return. If our subsequent biological opinion on the specific action concluded in jeopardy, the Bureau could determine that the action, as proposed, would not proceed; for mining actions, the Bureau could prohibit the proposed action on the basis that it would result in undue and unnecessary degradation (Foreman, pers. comm.).

Effects of Anthropogenic Activities on Listed Plant Species

In this section, we attempted to briefly summarize how various anthropogenic activities could affect the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant. Note that this analysis is general in nature and is not intended to apply to any specific action that is or may be authorized by the Bureau.

The use and maintenance of roads can affect listed plant species in several ways. Plants and habitat that are on or immediately adjacent to roads can be lost or disturbed when vehicles stray from the road during use or maintenance activities. Dust and mud generated by motorized vehicles, whether they are maintaining or using the road, can cover plants and interfere with physiological functions ultimately affecting plant vigor, reproduction, and survival; this impact would be greatest near the road and in areas traversed by numerous roads. Invasive, nonnative plants can be transported into areas along roads. Modifying drainage patterns, such as through the use of culverts where roads cross drainages, may cause unnatural plant distributions.

We are unaware of any trails that traverse habitat of the Lane Mountain milk-vetch, Amargosa niterwort, or Ash Meadows gumplant. However, the terrain in which these species live is generally accessible on foot. The primary effect of walking through habitat of these species would be trampling of plants. Individuals of the Lane Mountain milk-vetch are less likely to be trampled because of their occurrence within shrubs. Foot travel has the potential to spread seeds of non-native species. Given that people on foot cannot travel as far or as fast as those in vehicles, impacts from walking likely pose a low degree of threat to these species.

Ground-disturbing activities within habitat of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant could occur as a result of the implementation of the guidelines and elements of the California Desert Conservation Area Plan. Impacts to the listed plants that would likely result from disturbance of the ground include direct removal of plants and seeds, trampling of plants, destruction and disturbance of habitat, changes in hydrology, burial of plants and seeds under overburden and spoils, and interference with pollination and seed dispersal. Ground-disturbing activities can accelerate the spread of invasive non-native plant species by destruction of soil crusts and cryptogams; these non-native species, in turn, can compete with the listed species for nutrients, germination sites, and scarce moisture, and alter the ability of the area to carry wild fires. The species being considered in this biological opinion are not adapted to fire; consequently, fires could result in a substantial loss of individual plants and severely alter the plant community structure within their habitats.

Fragmentation of habitat could result in a decline in the health of the occurrences of the species under consideration in this biological opinion. If the occurrences or portions of the occurrences are separated from one another by habitat that pollinators cannot cross, pollinators may not have adequate access to ensure propagation. At this time, we do not have information on the pollination ecology of these species. Fragmented habitat is also more susceptible to indirect effects, such as dust from roads and other disturbed areas and invasion by non-native species.

Groundwater pumping and water diversion within the region pose the greatest known threat to the persistence of the Ash Meadows gumplant and Amargosa niterwort. Habitat of the Ash Meadows gumplant typically consists of saltgrass meadows along streams and pools and may infrequently include drier areas with alkali clay soils; the Amargosa niterwort is associated with salt encrusted alkali flats that tend to have persistent soil moisture. Extraction of water from the aquifer that supports these species may reduce the overall extent of habitat, dessicate plants, reduce the likelihood of seed germination, reduce the number and distribution of plants in the local area, and change the hydrological regimes that are an integral component of their critical habitats. Alterations in the hydrological regimes that promote the presence of the Amargosa niterwort and the Ash Meadows gumplant could improve environmental conditions favored by other plant species, thereby resulting in pervasive changes in the overall structure and composition of the plant community that are less conducive to the presence of the listed species.

The use of herbicides could result in direct mortality of individuals of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant. Other pesticides may reduce or eliminate the populations of pollinators. Both the active ingredient and surfactants may be toxic to individuals of the listed species and pollinators.

The presence of the culverted road that bisects the critical habitat of the Amargosa niterwort alters the hydrology of the Carson Slough drainage and probably results in an unnatural plant distribution that is a caused by altered surface water flows.

Effects of Multiple-Use Classes, Guidelines, and Elements

In the following sections, we combined our evaluations of the guidelines for the relevant multiple-use classes and of the elements of the California Desert Conservation Area Plan. Where appropriate, we also evaluated the potential impacts of ongoing uses; note that this biological opinion does not analyze the potential effects of any future specific actions requiring approval, authorization, or implementation by the Bureau.

Water Quality

The Bureau's guidelines for water quality on Class L lands provide for the protection and enhancement of surface and groundwater resources except for instances of short-term degradation caused by water development projects. Within Class M lands, the guidelines state that management activities will be implemented to minimize degradation of water resources. We do not have information that would allow predictions of how the Ash Meadows gumplant and Amargosa niterwort would be affected by variations in water quality, but increases in these compounds may create conditions that promote the presence of invasive plant species and thereby act to the detriment of these species.

In the Tecopa Hot Springs area, the Bureau has authorized or facilitated the operation of a sewage lagoon that receives untreated water from four public restrooms. The Lahonton Regional

Water Quality Control Board has informed the Bureau that the sewage lagoon is leaking and that repairs would probably be necessary in the near future. Information on the quality and quantity of the effluent that may be escaping the lagoon is not available, but untreated sewage is likely to have elevated levels of bacteria and nitrogenous waste products. As noted in the previous paragraph, we do not have information on the effects of water quality on the Amargosa niterwort.

Cultural and Paleontological Resources and Native American Values

We have combined these guidelines and elements because the Bureau's program guidance is generally similar for cultural and paleontological resources and Native American values. It calls for the preservation and protection of archaeological and paleontological values and sites of value to Native Americans that occur in both Class L and M lands. The Bureau may authorize some activities associated with these resources and values that could occur with habitat of the three species being considered in this biological opinion. However, these activities would generally be fairly restricted in scale, such as the stabilization or protection of a site or research that may result in ground disturbance, use of vehicles on existing routes of travel, and walking through habitat of the listed species.

The Bureau is unaware of any cultural and paleontological resources or Native American values within the habitat of the Lane Mountain milk-vetch, Amargosa niterwort, or Ash Meadows gumplant. Because of the existing program guidelines and elements and the nature of activities that could occur under them, the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant and the critical habitat of the latter two species are not likely to be substantially adversely affected by activities related to the Bureau's management of cultural and paleontological resources or Native American values.

Electrical Generation Facilities

The guidelines and elements of the California Desert Conservation Area Plan allow the establishment of nuclear, fossil fuel, wind, solar, and geothermal facilities on Class M lands and wind, solar, and geothermal facilities on Class L lands. The California Desert Conservation Area Plan notes that a typical powerplant occupies 2,500 to 3,000 acres (Bureau 1999). Solar power plants, such as the existing facilities at Kramer Junction and Harper Dry Lake, cover large areas; the direct ground disturbance associated with wind farms may be substantially less, but the extensive system of roads to connect turbines and other facilities would also result in a great degree of habitat loss and fragmentation over large areas. Solar, fossil fuel, and nuclear facilities require substantial amounts of water to operate. By comparison, the occupied habitat of the Amargosa niterwort within the critical habitat unit is approximately 65 acres and the entire critical habitat unit of the Ash Meadows gumplant in California covers approximately 340 acres. Although the area inhabited by the Lane Mountain milk-vetch is somewhat more extensive, it also is very restricted in its distribution.

The Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant occupy small geographic areas. Because of the relatively restricted areas occupied by these species, the placement of an energy-generating facility within occurrences of these three species could result in the extirpation of that occurrence. The Ash Meadows gumplant and Amargosa niterwort would also likely be affected by the extraction of water to service the plant; for this reason, power plants that have the potential to affect the local hydrology adjacent to habitat occupied by these species could cause substantial degradation of the occurrence by reducing or degrading an essential physical feature needed for their survival. Consequently, the authorization and development of a power plant of any type within or adjacent to habitat occupied by any of these three species could appreciably degrade the ability of these species to survive and recover. For the Ash Meadows gumplant and Amargosa niterwort, the ability of their critical habitat to support their survival and recovery could also be compromised.

The program guidance for energy-generating facilities within the California Desert Conservation Area Plan does not provide substantial assurance that the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant will be adequately conserved. However, other factors must be considered in conducting an analysis of whether program guidance could result in an irreversible decline in the status of a species. In this particular case, the additional factors to consider include the likelihood that such energy-generating facilities would be developed in or near habitat of these species, changes in technology and need, and the creation of the Lower Carson Slough Area of Critical Environmental Concern, as proposed by the Bureau in the draft environmental impact statement for the Northern and Eastern Mojave bioregion.

At present, the likelihood that an energy-generating facility would be developed within or near habitat of any of these three species appears to be low for several reasons. First, the Amargosa niterwort and Ash Meadows gumplant and portions of the range of the Lane Mountain milk-vetch are located in remote locations, far from any large transmission line that would be needed to convey power from the facility to a market. The remaining portion of the range of the Lane Mountain milk-vetch on public lands is reasonably close to a major transmission line; although this area does not appear to be suitable for a wind energy development, other energy-generating facilities may be feasible.

Changes in technology and need could render more attractive sites that are currently unsuitable for a facility. The economics of building a transmission line from a remote site may be feasible if energy prices are high; additionally, other facilities that require energy could be built closer to new generating sites so power would not need to be transmitted over long distances. Advances in energy-generating technologies, such as turbines that produce power with less wind, may increase the likelihood that areas occupied by these species could be viewed favorably for energy development in the future.

Finally, the Bureau intends to designate the Lower Carson Slough Area of Critical Environmental Concern through the Northern and Eastern Mojave bioregional plan. As part of this proposal, the Bureau would develop a management plan for the area of critical environmental concern and

begin implementation within 3 years. Among other goals, the management plan would be developed to protect the Amargosa niterwort and Ash Meadows gumplant. We also note the California Desert Conservation Area Plan states that the designation of areas of critical environmental concern includes a process for identifying management actions that are necessary to protect sensitive resource values. The management direction for areas of critical environmental concern can override the multiple-use class guidelines; therefore, the Bureau has the ability to craft a management plan for the Lower Carson Slough Area of Critical Environmental Concern that could alleviate or eliminate the potential for energy-generating facilities to affect the survival and recovery of the Amargosa niterwort and Ash Meadows gumplant. Because of the less remote location of a portion of its range and the lack of a proposal to designate an area of critical environmental concern, the Lane Mountain milk-vetch remains at greater risk from the development of an energy-generating facility.

To summarize the potential effects of this program guidance on these species, the remoteness of the Amargosa niterwort and Ash Meadows gumplant, the lack of any current energy-generating facilities in or near their habitat, and the Bureau's proposal to designate an area of critical environmental concern to protect these species provide evidence that the management direction regarding electrical generation facilities is not likely to substantially impair the survival and recovery of these species or reduce the ability of their critical habitat to support them. Because of the proximity of the remaining portion of the range of the Lane Mountain milk-vetch on public lands to a major transmission line and the lack of a proposal for a protective area of critical environmental concern, the program guidance with regard to electrical generation facilities may pose a substantial risk to this species.

Distribution Facilities for Electricity

The maintenance and upgrading or improvement of existing facilities in accordance with existing right-of-way grants within Class M lands could result in the disturbance or loss of a limited amount of habitat and individuals in the Lane Mountain milk-vetch occurrence west of Lane Mountain. A distribution line parallels Copper City Road, a primary route of travel, which crosses through this occurrence. The potential also exists that vehicles associated with maintaining, upgrading, or improving the distribution line could accelerate the spread of the non-native Sahara mustard (*Brassica tournefortii*) by transporting seeds from the southern portion of Copper City Road, where this species already exists, and by disturbing soils.

The guidelines allow for the development of new distribution systems within Class L and M lands. The guidelines direct that new distribution facilities will be placed within existing rights-of-way, where they are reasonably available; within Class L lands, facilities would be placed underground unless this alternative was more damaging to the environment. The development of new distribution facilities, either within or outside of existing rights-of-way, within Class L and M lands could result in the disturbance or loss of a substantial amount of habitat and individuals of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant. These impacts would likely be particularly detrimental if they occurred outside of existing rights-of-

way; in such cases, the roads used to provide access to the facilities during construction and maintenance would fragment habitat and allow additional potential for unauthorized use of areas inhabited by these species. As noted in the previous paragraph, the threat of invasive non-native species is likely to increase with the disturbance associated with the development of new distribution facilities.

As noted in the discussion of energy-generating facilities, we must also consider the likelihood that such facilities would be constructed. Distribution facilities are currently absent from habitat of the Amargosa niterwort and Ash Meadows gumplant and absent from most of the area occupied by the Lane Mountain milk-vetch. The existing situation seems to indicate that the likelihood of such facilities being developed in the near future may be limited; however, it does not preclude this possibility.

Communication Sites

The guidelines allow for the maintenance and use, in accordance with right-of-way grants and applicable regulations, of existing facilities in both Class L and M lands. Lane Mountain, which is located to the east of the westernmost occurrence of the Lane Mountain milk-vetch, supports communications sites. The access road to these sites traverses habitat for this species. Although the communication facilities are located outside of habitat, maintenance and use of the road to the sites could result in loss of individuals and habitat of the Lane Mountain milk-vetch; given that the access road is well-established and has been used for numerous years, the direct loss of individuals is unlikely; dusting of plants located along the access route and the spread of non-native species may be the more important threats. Overall, the effect of the maintenance of the Lane Mountain communication sites on the Lane Mountain milk-vetch is likely to be minor.

The guidelines allow the development of new sites within Class L and M lands. The potential impacts of new communication sites would likely be similar to those described for new distribution lines. In the case of new communication sites, the impacts would likely be less linear, except in cases where a new access road was required.

The proliferation of new communication sites over the past several years would seem to indicate that the potential activity allowed by this guideline could result in substantial degradation and loss of habitat and individuals of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant. The locations of these species, which is generally away from major routes of travel, would seem to place them outside of areas with high potential for communication sites. However, as noted previously in this biological opinion, unforeseen changes in technology and need could alter the present situation.

Fire Management

The Bureau's guidance states that measures to suppress fires will be taken in accordance with specific fire management plans subject to such conditions as the authorized officer deems

necessary. Fire management plans provide a framework that describes the use of motorized vehicles, aircraft, and fire retardant chemicals that could be used to combat fires.

The use of motorized vehicles within habitat of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant would likely result in the crushing of individual plants, disturbance of seed banks that were not directly affected by fire, disturbance of soils that may later facilitate the colonization of invasive, non-native species, and injury or death of host plants of the Lane Mountain milk-vetch. Chemical fire retardants may also affect the three plant species by altering water quality or killing pollinators; however, specific studies on these potential effects have not been conducted.

The habitats that support the Lane Mountain milk-vetch, Ash Meadows gumplant, and Amargosa niterwort do not naturally support fire-based ecological processes. Therefore, although fire suppression could result in deleterious effects to these species and the critical habitat of the Amargosa niterwort and Ash Meadows gumplant, the suppression of wildfires in these areas is likely to provide a net benefit to these three species.

The plant community where the Ash Meadows gumplant and Amargosa niterwort occur is relatively sparse, the fuel characteristics in this habitat are not, at this time, conducive to the spread of fire. Similar conditions exist in the small Paradise Valley occurrence of the Lane Mountain milk-vetch on public lands. Therefore, the potential that a fire would occur and that the subsequent fire suppression would affect these species in these areas is low. However, the plant community where the Lane Mountain milk-vetch exists on Coolgardie Mesa may be dense enough to carry a fire. Given the proximity of private residences in this area, fire and subsequent suppression are more likely to occur within this habitat.

Vegetation Harvesting

On Class L and M lands, the Bureau can allow, by permit, the removal of native plants for commercial and non-commercial purposes and harvesting by mechanical means. These activities could affect the Lane Mountain milk-vetch, Ash Meadows gumplant, and Amargosa niterwort throughout their ranges. Potential impacts could include loss of habitat and individuals, particularly if the harvesting method involves the use of machinery; trampling of individual plants; fragmentation of habitat, if the harvesting is extensive and results in some conversion of habitat; and introduction of non-native species. If harvesting equipment is used in numerous locations, the potential for spreading non-native species could be substantial.

The severity of these effects would vary directly in relation to the scale and method of harvesting. The collection of a few samples of plants by hand while walking cross-country would have far less impact than the mechanical harvest of a large area. The only proposals, of which we are aware, to harvest plants within habitat of these species have involved the limited removal of portions of Lane Mountain milk-vetch plants for research; these activities were reviewed by both

the Service and Bureau under their respective authorities. At this time, the removal of vegetation does not appear to be a substantial threat to these species.

On Class M lands, mechanical control of vegetation may be allowed after consideration of possible impacts. These activities could affect the Lane Mountain milk-vetch and Amargosa niterwort where they occur on Class M lands. Potential impacts would be similar to those described with regard to the harvesting of plants by mechanical means.

After site-specific planning, the Bureau's program direction allows the eradication of noxious weeds on Class L lands by chemical means and spot application of pesticides on Class M lands. The use of herbicides to destroy weeds could result in the mortality of some individuals of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant; the potential also exists that pesticide use on Class M lands could affect pollinator species. However, the control of weeds and other pests within habitat of listed species can provide important benefits; consequently, the overall program direction with regard to the use of pesticides on Class L and M lands is positive.

The Bureau's program direction allows enclosures within Class L and M lands. The potential exists that some individuals of the listed plants may be trampled during installation and maintenance of enclosures; some ground disturbance would also likely occur. However, the amount of trampling and ground disturbance and trampling would likely be fairly minor. Additionally, enclosures can be useful in protecting sensitive resources and can assist in conducting research which may provide information that is important for the recovery of the species.

The Bureau's program direction allows prescribed burning within Class L and M lands after development of a site-specific management plan. The species being considered in this biological opinion are not adapted to fire; fire is not a necessary ecological factor within the habitats in which they occur. Consequently, fires could have severe detrimental effects on the species and the community structure of their habitats. At this time, the use of prescribed burning within their habitat is not appropriate. Given that the Bureau is not likely to conduct prescribed burns within the habitat of these species, this program direction poses a low degree of threat.

After site-specific planning, the Bureau's program direction allows the eradication of noxious weeds on Class L lands by chemical means and spot application of pesticides on Class M lands. The use of herbicides to destroy weeds could result in the mortality of some individuals of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant; the potential also exists that pesticide use on Class M lands could affect pollinator species. However, the control of weeds and other pests within habitat of listed species can provide important benefits; consequently, the overall program direction with regard to the use of pesticides on Class L and M lands is positive.

Mineral Exploration and Development

The Bureau's guidelines allow the exploration for and development of minerals on Class L and M lands. If these activities are conducted under the casual use category, as described in the California Desert Conservation Area Plan and the Description of the Proposed Action section of this biological opinion, miners or prospectors are not required to send the Bureau a notice or plan of operation that describes the mining-related actions prior to their implementation. However, the mining regulations state that "(o)perators may use motorized vehicles for casual use activities provided the use is consistent with the regulations governing such use..., off-road vehicle use designations contained in (Bureau)-land-use plans, and the terms of temporary closures ordered by (the Bureau)" (43 CFR 3809.5(1)); the California Desert Conservation Area Plan is the land-use plan which established that vehicles were confined to existing roads within Class L and M lands. Consequently, under the casual use provisions as defined for the California Desert Conservation Area, operators may not use vehicles off of established roads.

Individuals of the listed plant species could be crushed by the foot traffic of operators or equipment during exploration. Ground disturbance may also occur as a result of exploration. The ground-disturbing activity that may occur could result in the invasion of non-native plants. The guidelines require that disturbances created during casual use be restored. Restoration attempts often fail in the harsh climate of the desert. However, because the disturbance allowed under casual use is minimal, the required restoration may be attainable. A possible exception would be invasion by non-native plants, in part because this effect would likely not be seen for months after the casual use and restoration occurred.

Without off-road vehicle use, the amount and size of other equipment that may be employed during casual use is likely to be limited. For this reason, the amount of disturbance to individuals and habitats of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant that may occur as a result of casual use under the mining guidance of the California Desert Conservation Area Plan is likely to be limited.

Certain areas on the western portion of Coolgardie Mesa are popular with mining clubs. The claims in this area are held by groups that allow members to mine within the claim. This activity has resulted in the development of extensive surface disturbance. We are not aware that this mining activity is occurring within habitat of the Lane Mountain milk-vetch; during visits by Service staff to these sites, the soils appeared deeper than those usually occupied by the Lane Mountain milk-vetch. However, given the discovery, by botanists working for the Army, of this species on the eastern slopes of the Mud Hills, some potential exists that mining club activity may affect this species.

A plan of operation, approved by the Bureau, is required before the initiation of exploration or mining activities that would have impacts greater than would be expected under the casual use or notice required categories. A plan of operation is also required for any bulk sampling in which the operator will remove 1,000 tons or more of presumed ore for testing. Activities associated

with plans of operation could result in the loss of individuals of the three listed plant species, loss of their habitat, ground disturbance, and the introduction or spread of non-native plant species. The Bureau will require restoration of lands disturbed during the mining activities conducted under plans of operations. However, restoration efforts may not be successful in re-establishing habitat for and individuals of the listed species because we do not fully understand the conditions that these species require and may not be able to restore those aspects that we do understand. For example, we know that the Lane Mountain milk-vetch grows only on thin soils; the technology may not exist to allow the restoration of the environmental conditions required by individuals of this species.

The mining laws allow individuals and corporations to apply for patents on public lands that have valid existing rights. Once these lands are removed from federal ownership, any individuals of the listed plant species which are located on the patented lands would receive little, if any, protection under the authorities of the Act. However, on October 1, 1994, Congress placed a moratorium on the acceptance of new mineral patent applications. The moratorium remains in effect with the passage of the Interior Appropriations Act HR 2217 (section 309), signed by the President on November 5, 2001. For this reason, patenting of public lands is not likely to adversely affect the listed species under consideration in this biological opinion at this time. However, should Congress not renew the moratorium at some point in the future, the potential exists that these species could be adversely affected. Additional consultation, pursuant to section 7(a)(2) of the Act, may not be required because the patenting of land is not a discretionary action on the part of the Bureau.

Extraction of geothermal, oil, and gas reserves may take place within Class L and M lands. The general area in the vicinity of critical habitats of the Amargosa niterwort and Ash Meadows gumplant has been designated as a potential geothermal resource area. In the event that suitable geothermal resources were present within or near habitat of the two species, the development of infrastructure for geothermal facilities could result in substantial ground disturbance, occupation, and loss of habitat of these species; development of geothermal resources could alter the regional hydrology to the extent that soil moisture regimes and other hydrological features would be negatively affected. Substantial alteration of the hydrological regime could result in an extensive decline in the status of these species. At the present time, the likelihood of geothermal development in the area of Death Valley Junction, where the Amargosa niterwort and Ash Meadows gumplant are located, is low because the hydro-thermal gradient is not great enough to warrant development of an energy facility; the potential for geothermal development to occur at Tecopa is greater (Essington, pers. comm.).

Any activity related to mineral exploration and development that resulted in the removal of water from water courses or the aquifer that maintained the mesic conditions in habitats that are occupied by the Amargosa niterwort and Ash Meadows gumplant would likely affect these species; the removal of a large amount of water from a drainage or aquifer would likely cause substantial deleterious effects. Changes in other hydrological conditions, such as water quality, may also degrade habitat and result in a reduction in the number of individuals of these species.

The proposed establishment of the Lower Carson Slough Area of Critical Environmental Concern does not, in itself, eliminate the potential for adverse effects related to mining activity or exploration. Until such time that a management plan for the area of critical environmental concern specifically modifies or eliminates mining activities near and within the area occupied by the Amargosa niterwort and Ash Meadows gumplant, the Bureau's guidance with regard to mining activities will continue to have the potential to adversely affect the species and their critical habitat. The lack of a proposal to develop and manage an area of critical environmental concern places the Lane Mountain milk-vetch at relatively greater risk from mineral exploration and development. Historically, large-scale mines have not been proposed within habitat of these species.

The Bureau may refuse to approve a plan of operations until the plan encompasses the Bureau's mitigation and compensation requirements. The mitigation required by the Bureau could reduce the level of the adverse effects of a mining operation; compensation could potentially offset a portion of the residual impacts.

The mining laws and regulations require avoidance of unnecessary and undue degradation and reclamation of disturbed areas. If the Service found that a proposed plan of operations was likely to jeopardize the continued existence of one or more of the listed species or adversely modify its critical habitat, the Bureau, with the authorities at 43 CFR 3809.411(d)(3)(iii), "may disapprove of or withhold a plan of operations if the proposed operations 'would result in unnecessary or undue degradation of public lands'" (Bureau 2002). Unnecessary or undue degradation is defined as "conditions, activities, or practices that, among other things, 'fail to comply with ... other Federal or State laws related to environmental protection..." (Bureau 2002). The Bureau also noted that a biological opinion from the Service concluding that a plan of operations would likely jeopardize the continued existence of a species "would certainly indicate a failure to comply with the standards of the Endangered Species Act, and would, therefore, constitute unnecessary and undue degradation."

Under the current baseline conditions for these species and critical habitat of the Ash Meadows gumplant and Amargosa niterwort, consultation, pursuant to section 7(a)(2) of the Act, on a small mine may not result in a determination of jeopardy or adverse modification. Therefore, although the Bureau would require the operator to reduce effects and compensate, the likely outcome of such a mining operation would be a long-term or permanent removal of individuals and habitat of the Lane Mountain milk-vetch, Amargosa niterwort, or Ash Meadows gumplant. If an operator proposed a mine that would have effects rising to the level of jeopardy to the species or adverse modification of critical habitat, the Bureau has the regulatory authority to disapprove the proposal.

In summary, the California Desert Conservation Area Plan does not contain specific program guidance that would preclude mining in areas occupied by the Lane Mountain milk-vetch, Ash Meadows gumplant, or Amargosa niterwort. However, the generally low mineral potential of the areas occupied by these species (Bureau 2002, see map 11 [economic mineral resources] in

Bureau 1999), the lack of any substantial mining efforts in the action area in the past, and the Bureau's unnecessary and undue degradation standard provide some assurance that mining activity is unlikely to substantially degrade the baseline for the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant.

Motorized-vehicle Access and Transportation

Under the Bureau's existing guidance, new roads and ways may be developed within Class L and M lands. The development of new roads and ways would result in habitat loss and fragmentation and loss of individuals of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant. In addition to disturbance and fragmentation of habitat, new roads and ways that cross drainages inhabited by the Amargosa niterwort and Ash Meadows gumplant could disrupt the natural hydrological regime. The loss, disturbance, or fragmentation of habitat and the disruption of hydrological regimes could reduce the ability of the critical habitat units of the Amargosa niterwort and Ash Meadows gumplant to support these species. All new roads increase the likelihood of invasion by non-native plant species.

The Bureau's guidance allows the use of motorized vehicles on existing routes of travel until designation of routes is accomplished. Vehicle use on the existing routes of travel is not likely to affect the listed species under consideration in this biological opinion in a substantial manner. Dust generated from use of the road may cover individuals near the road and interfere with pollination or photosynthesis. Currently, no roads traverse habitat of the Ash Meadows gumplant and the new fence along Stateline Road that bisects critical habitat of the Amargosa niterwort precludes travel on an existing route immediately south of the road. Habitat occupied by the Lane Mountain milk-vetch is crossed by several roads; however, our casual observations seem to indicate that the plants appear equally abundant both near and away from roads.

The Bureau's guidance allows cars and trucks to drive and park up to 300 feet from a route of travel. Such off-road travel can crush plants, degrade habitat (particularly when vehicles need to be extracted from deep sand, damp areas, or rocky terrain), and cause the spread of non-native plant species. In habitat occupied by the Amargosa niterwort and Ash Meadows gumplant, vehicles traveling off road can also alter soil moisture regimes. The crushing of host plants that are necessary for the establishment and persistence of the Lane Mountain milk-vetch could occur within habitat of this species.

The presence of routes of travel through or near the habitats of listed species presents an ongoing level of threat to these species from illegal vehicle use. Although the section 7 process is not intended to review illegal activities, unauthorized off-road use occurs at least partially as a result of authorized activities. The new fence that bisects the critical habitat of the Amargosa niterwort should reduce the likelihood of unauthorized off-road activity. Because the general terrain where the Lane Mountain milk-vetch occurs is more rugged than where the Ash Meadows gumplant and Amargosa niterwort occur, some drivers may perceive some level of challenge in driving off-road in that plant's habitat and attempt to leave existing routes. We have observed extensive

tracks made by motorcycles within and adjacent to habitat of the Lane Mountain milk-vetch, both on Coolgardie Mesa and on former public lands west of the Paradise Range.

Within Class L and M lands, railroads and trams may be allowed. Under certain conditions, temporary landing strips may be allowed in Class L lands and airports and landing strips may be allowed within Class M lands. Railroads, trams, temporary landing strips, and airports do not currently exist in areas where the three listed species occur. These facilities, if developed, could result in loss and fragmentation of habitat, loss of individual plants, disruption of hydrological regimes, and the spread of non-native species. At this time, the likelihood of these facilities or operations being proposed is low.

Recreation

Within Class L lands, the Bureau's guidelines allow for recreation which generally involves low to moderate user densities. Recreational activities can include backpacking; camping at primitive, unimproved sites; hiking; horseback riding; rockhounding; nature study; and rock climbing. Non-competitive vehicle touring and events on approved routes of travel are also permitted under existing Bureau guidance. Any organized event requires a permit specifying the conditions of use, which could include the definition of the approved routes and prohibitions, such as no pit, start, finish, or spectator areas.

Within Class M lands, the Bureau's guidelines allow for recreation which may involve moderate to high user densities. Recreational activities can include those permitted for Class L lands. Competitive events involving motorized vehicles are limited to existing routes of travel and must be approved by the authorized officer. Pit, start, and finish areas must be approved by the authorized officer. All competitive events involving 50 or more vehicles require permits.

Many of the effects of activities that could occur under the Bureau's guidance for recreation have been discussed previously in the Effects of the Action section of this biological opinion (*e.g.*, the effects of the use of roads by vehicles and walking through habitat). Other recreational activities, such as horseback riding through habitat of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant, could also cause disturbance of the ground, crushing of plants, and introduction of non-native species. However, the areas that support these species have not been used extensively in the past for authorized recreational activities. Consequently, the threat to these species from general recreation is low.

Unauthorized activities, particularly off-road vehicle use, have caused degradation of habitat in and near areas occupied by the Lane Mountain milk-vetch. The access provided by the Bureau for legitimate uses, such as recreation, facilitates some degree of unauthorized use.

The Bureau periodically renews a lease to the County for Inyo for the public bath house at Tecopa Hot Springs; we will discuss this ongoing use here because the recreation guidelines allow the development of permanent or temporary facilities if they promote public health and

safety. The bath house facilities occur on Class L lands; the Bureau's guidance on such lands provides for recreation with low to moderate user densities.

Past and current uses and the development of infrastructure in the vicinity of the bath houses has likely adversely affected the Amargosa niterwort in numerous ways (Bureau 2001b). Compaction of soils has likely affected the establishment of seedlings. Capping of the spring source and diversion of surface water to the bath houses has affected the moist soil regime that is necessary for the establishment and persistence of the Amargosa niterwort. The establishment of non-native, invasive plant species, including an unidentified species of palm tree, salt cedar, and athel trees (*Tamarix aphylla*), has likely reduced the overall amount of habitat that could be occupied by the Amargosa niterwort. The existing sewage lagoon and various water pipelines require periodic maintenance and replacement; these activities require disturbance of potential or occupied habitat. These activities have likely resulted in the loss of individuals of the Amargosa niterwort and fragmentation of its remaining habitat. Installation of the bath houses preceded the listing of the Amargosa niterwort; however, the continuation of many of these activities since the listing have largely been a result of insufficient survey data that would have allowed the Bureau to recognize the presence of the Amargosa niterwort and avoid impacts to individuals or their habitat.

Wildlife Species and Habitats

Within Class L and M lands, the Bureau's guidance allows the control of depredating wildlife and pests in accordance with existing State and federal laws. Reintroduction or introduction of native species or established exotic species is also allowed on Class L and M lands. Projects that are designed to manipulate habitat quality for wildlife benefits are allowed; within Class M lands, chemical and mechanical manipulation may be allowed. The Bureau may also monitor the status of certain wildlife populations and how public use of the desert may be affecting this resource.

Mechanical manipulations that involve ground disturbance may crush individuals of the listed plant species or create conditions that facilitate the replacement of a native plant community with exotic species that may replace the native flora. Ground disturbance may also destroy the host plants that are necessary for successful recruitment of the Lane Mountain milk-vetch.

The control of pest species could affect the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant both positively and negatively. The removal of pests could assist in restoring native biological communities, which would likely be beneficial to the listed species. However, the implementation of control measures could cause ground disturbance, loss of individuals of the listed species, and other adverse effects.

Baseline monitoring could adversely affect the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant if individual plants are crushed by workers traversing occupied habitat; minor ground disturbance and the spread of non-native plant species may also occur during monitoring. However, in general, the level of activity associated with monitoring would

likely result in minor impacts; additionally, the information gained during such monitoring could be useful in management of the listed taxa.

The deliberate introduction or reintroduction of wildlife species or wildlife management activities involving chemical and mechanical manipulations could cause loss of individuals and habitat through ground disturbance, result in the inadvertent introduction of non-native species, or reduce the abundance of pollinator species. The introduction or reintroduction of wildlife species could also affect these species if the introduced species forages on individuals of the listed species or the host plants of the Lane Mountain milk-vetch or alters the existing ecological conditions in some manner. However, the Bureau has not authorized any activities involving in areas where the Ash Meadows gumplant, Amargosa niterwort, and Lane Mountain milk-vetch occur. Consequently, the program guidance for wildlife species and habitats does not appear to pose a substantial threat to these species or critical habitat of the Amargosa niterwort and Ash Meadows gumplant at this time.

Miscellaneous Activities

The Bureau will occasionally undertake, authorize, or fund activities that were not specifically addressed by a particular element or land use activity in the California Desert Conservation Area Plan. For example, guidance regarding the authorization of a project for the sole purpose of pumping groundwater may be lacking, superficially described, or very general. Such a project in the vicinity of the Amargosa niterwort could potentially be approved within the current guidelines of the Plan; the authorization could result in lower local groundwater tables that adversely affect the survival and recovery of the species. We recognize the development of program-level guidance relevant to every potential activity that could occur in the California Desert Conservation Area is not feasible. However, actions approved without guidance that addresses the specific needs of listed species could cumulatively lead to irreversible degradation of the species' condition.

Summary

The amended California Desert Conservation Area Plan provides general guidance to the Bureau for its management of activities within the California Desert Conservation Area. A portion of the guidelines for the multiple-use classes and the elements clearly benefits the conservation of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant; for example, prohibiting the development of nuclear and fossil fuel plants within Class L lands ensures that the Ash Meadows gumplant, which occurs only on such lands, would not be threatened by this type of activity. Other guidelines for the multiple-use classes and the elements allow activities to occur that could have substantial adverse effects on the listed species; as an example, the guidelines allow the development of wind and solar plants within Class L lands. However, except for casual uses (*e.g.*, casual mining exploration, vehicle use on existing roads, hiking, vehicle camping along existing roads), activities and projects will receive site-specific environmental review and consultation with the Service pursuant to section 7(a)(2) of the Act.

Therefore, all activities and projects, except casual uses, may be denied, modified, or mitigated to reduce adverse effects to listed species.

The development of an area of critical environmental concern in the lower Carson Slough area should provide increased protection to the Ash Meadows gumplant and Amargosa niterwort; the ultimate value of the designation of the area of critical environmental concern cannot be determined until its management plan is developed and implemented. As mentioned previously in this section of the biological opinion, the remote locations of most of the occurrences of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant lend some degree of protection from many of the activities allowed by the guidelines and elements that could adversely affect them. We have also noted that, in at least two cases (specifically, unauthorized off-road vehicle use and authorization of the lease for the Tecopa Hot Springs bath house within habitat of the Lane Mountain milk-vetch and Amargosa niterwort, respectively), damage to habitat of these species has occurred. The Bureau has addressed unauthorized off-road vehicle use by constructing a fence along both sides of the paved road that bisects critical habitat of the Amargosa niterwort; monitoring will determine the effectiveness of the fence.

The low level of activities that are ongoing within the habitat of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant provides an indication that most occurrences of these species are not experiencing direct and immediate threats and impacts as a result of the implementation of the California Desert Conservation Area Plan. The level of threat could increase in the future as human needs and activity patterns change.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. We are unaware of any non-federal actions that are reasonably certain to affect these species.

CONCLUSION

After reviewing the current status of these species, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is our biological opinion that continued implementation of California Desert Conservation Area Plan, as modified by previous amendments, previous consultations on listed species, the proposed Northern and Eastern Mojave bioregional plan, and the interim measures, is not likely to jeopardize the continued existence of the Amargosa niterwort, Ash Meadows gumplant, and Lane Mountain milk-vetch. It is also our biological opinion that the proposed action is not likely to destroy or adversely modify the critical habitat of the Amargosa niterwort and Ash Meadows gumplant.

We have reached these conclusions because the Bureau has proposed and implemented, in some cases, measures to avoid or minimize adverse effects to and further the conservation of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant and their habitats. Additionally, the Bureau has proposed to create the Lower Carson Slough Area of Critical Environmental Concern; management guidance adopted for specific areas of critical environmental concern can override the general program guidance. Therefore, although some aspects of the Bureau's program guidance may allow activities to occur that could have substantial detrimental effects on the Ash Meadows gumplant and Amargosa niterwort, little likelihood exists that such actions would occur before the management plan for the area of critical environmental concern is developed and implemented. Finally, every future discretionary action that the Bureau would undertake, authorize, or fund that may affect these species is subject to the requirements of section 7(a)(2) of the Act. Program guidance in the California Desert Conservation Area Plan clearly states that the Bureau will comply with the Act; this compliance includes following the guidance provided by all biological opinions provided by the Service.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act does not address the incidental take of listed plant species; however, protection of listed plants is provided in that the Act requires a Federal permit for the removal or reduction to possession of endangered or threatened plants from Federal lands. Furthermore, it is unlawful for any person to remove, cut, dig up, or damage or destroy a listed plant species in knowing violation of any law or regulation of any state or in the course of any violation of a state criminal trespass law.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The California Desert Conservation Area Plan provides the Bureau with management direction for much or all of the geographic range of the Lane Mountain milk-vetch, Amargosa niterwort, and Ash Meadows gumplant and thereby has a profound effect on their survival and recovery. The importance of the California desert to the conservation of these species magnifies the importance for the California Desert Conservation Area Plan and the collective effects of its implementation to reflect the recovery goals or needs of listed species, as described in approved recovery plans. However, in its current configuration, the California Desert Conservation Area Plan is structured to a great degree to rely on section 7(a)(2) consultation to avoid jeopardy or adverse modification of critical habitat, rather than to establish a program that promotes recovery of listed species in conformance with section 7(a)(1) of the Act.

The recovery plan for the listed species of Ash Meadows (Service 1990) identifies several tasks that are intended to promote the protection and recovery of the Amargosa niterwort and Ash Meadows gumplant. The Bureau's biological assessment notes that the guidelines for Class L lands are "generally consistent" with the management recommendations for the Amargosa niterwort and Ash Meadows gumplant in the recovery plan; it also notes that the guidelines for Class M lands are "in conflict" with the management recommendations for the Amargosa niterwort in the recovery plan. We concur that the Class L guidelines provide a greater degree of protection than those of Class M. However, even the Class L guidelines allow activities that could have substantial deleterious effects on listed species that occur on these lands. We fully understand that all future actions would be subject to full review, under the authorities of section 7(a)(2) of the Act, and that the Bureau could deny proposals for activities that would compromise the survival and recovery of the listed species. However, the current management direction allows potential conflict between development and conservation. The Bureau could, through the development of guidance in the form of the management plan for the area of critical environmental concern, provide clear direction that the primary goal in areas occupied by these species is their survival and recovery.

We have based the following conservation recommendations on tasks contained in the recovery plan for the Amargosa niterwort and Ash Meadows gumplant, our understanding of the recovery needs of these species, and potential threats to their survival and recovery.

1. The Bureau should include provisions in the management plan for the Lower Carson Slough Area of Critical Environmental Concern that are designed to reduce or avoid any adverse effects of mineral entry on the Amargosa niterwort and Ash Meadows gumplant. These provisions could include conducting a validity examination on all claims for which a plan of operations is proposed. The Bureau should establish a program, possibly working with non-governmental organizations, to acquire any mining claims which the validity examination determines are valid.

2. The Bureau should adopt guidelines that prohibit the diversion or export of ground or surface water from the Lower Carson Slough Area of Critical Environmental Concern; this prohibition should also be extended to include areas that may be outside of the area of critical environmental concern but which contribute to its hydrological conditions.

3. The Bureau should remove salt cedar from within habitat of the Ash Meadows gumplant and Amargosa niterwort, monitor these areas, and take measures to control it when it re-invades.

4. The Bureau should conduct or promote studies of the ecology of these species, including the factors that control the population size of the Amargosa niterwort and Ash Meadows gumplant. Data gathered from these efforts should be incorporated into impact analyses that the Bureau may conduct as it reviews and authorizes future project proposals.

5. The Bureau should monitor the effectiveness of the fence that was installed in the vicinity of the proposed Lower Carson Slough Area of Critical Environmental Concern. If annual monitoring within three years of the time of fence construction indicates that unauthorized off-road vehicle activity still affects the Ash Meadows gumplant, the Amargosa niterwort, or their critical habitat, the design or extent of the fence should be modified to better protect the listed species.

6. The Bureau should expand its water monitoring activities to track long-term hydrological conditions along the length of the Amargosa River that supports the Amargosa niterwort and Ash Meadows gumplant and their habitats within the California Desert Conservation Area. We also recommend that the Bureau expand these activities to the entire length of the Amargosa River in the California Desert Conservation Area to ensure that water resource values in the entire watershed are monitored.

7. The Bureau should work closely with other agencies (*i.e.*, the National Park Service and Bureau offices in Nevada) that also have a stake in the management of aquatic and riparian environments along the Amargosa River. Coordination of protective management strategies across the entire Amargosa River watershed will serve to better protect water-dependent species and result in more effective understanding of land use patterns that have the potential to degrade aquatic and riparian habitats and species in an acute or chronic manner.

8. The Bureau should conduct in-depth resource inventories of water-dependant species along the Amargosa River that have narrow geographic or endemic geographic distributions. These species are vulnerable to potential population declines that may result from anthropogenic activities. After the status of sensitive species has been determined, the Bureau should develop and implement rigorous monitoring strategies for assessing and tracking temporal trends in population numbers and habitat quality.

9. The Bureau should review the impacts that are currently resulting from the periodic renewal of the lease that allows public bathing and use at the Tecopa Hot Springs facility. Pending this evaluation, the Bureau should develop and implement a management plan that promotes the maintenance and recovery of the Amargosa niterwort in the local area.

The Service is currently drafting a recovery plan for the Lane Mountain milk-vetch. Our conservation recommendations are based on tasks contained in the administrative draft of the recovery plan, our understanding of the recovery needs of this species, and the potential threats to its survival and recovery.

10. The Bureau should, after reviewing information gathered by the Army in 2001, complete surveys for the Lane Mountain milk-vetch to determine the full extent of its range; during these surveys, field workers should also document any threats to the species and disturbed areas that they encounter.

11. The Bureau should designate areas occupied by the Lane Mountain milk-vetch on land it manages as areas of critical environmental concern and develop a management plan that addresses the recovery needs of this species.

12. The Bureau should acquire any private lands occupied by the Lane Mountain milk-vetch or within 1 mile of occupied habitat areas to maintain the ecological processes on which the species depends.

13. The Bureau should include provisions in a management plan for the recommended area of critical environmental concern that are designed to reduce or avoid any adverse effects of mineral entry on the Lane Mountain milk-vetch. These provisions could include conducting a validity examination on all claims for which a plan of operations is proposed. The Bureau should establish a program, possibly working with non-governmental organizations, to acquire any mining claims which the validity examination determines are valid.

14. The Bureau should determine whether mining activity conducted by clubs on Coolgardie Mesa are affecting the Lane Mountain milk-vetch and the ecological processes upon which it depends. If the Bureau determines that these activities are adversely affecting this species, it should undertake actions to remediate the situation.

15. The Bureau should undertake research to ensure that management actions are appropriate and will contribute to the long-term survival of the Lane Mountain milk-vetch.

16. The Bureau should conduct or promote studies on habitat requirements, dispersal, colonization, reproduction, and interspecific interactions that may limit population numbers or densities (*e.g.*, herbivory, pollinators) to augment understanding of the species' ecology as it pertains to long-term persistence.

17. The Bureau should monitor the demographics, population trends, and threats to the Lane Mountain milk-vetch on a long-term basis.

18. The Bureau should restore degraded habitat in or near Lane Mountain milk-vetch populations.

19. The Bureau should control the spread of Sahara mustard into habitat of the Lane Mountain milk-vetch through regular monitoring and removal.

The Service requests notification of the implementation of any conservation recommendations so we may be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats.

REINITIATION NOTICE

This concludes formal consultation on the effects of the California Desert Conservation Area Plan, as amended, and proposed for modification, on the Lane Mountain milk-vetch, Ash Meadows gumplant, and Amargosa niterwort. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if (1) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (2) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (3) a new species is listed or critical habitat designated may be affected by the action.

If you have any questions regarding this biological opinion, please contact Doug Threloff or Ray Bransfield of our Ventura Fish and Wildlife Office at (805) 644-1766 or George Walker of our Barstow Fish and Wildlife Office at (760) 255-8852.

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